DIALOGUE

Journal of Learning and Teaching

2017/18

Submitting to Dialogue 2018/19

Dialogue is Southampton Solent University's learning and teaching journal: creative, evidence-led, inspiring.

The next call for submissions to Dialogue will launch on **Friday 22 June 2018**, at the annual Solent Learning and **Teaching Community Conference** (SLTCC), and is open to all Solent colleagues involved in learning and teaching across the professional services and schools, as well as SLTCC delegates from external institutions. SLTCC 2018 is focused on embedding 'best practice' through curriculum review. Please visit **www.solent.ac.uk/sltcc** for more information.

Formats for submission include research or theory articles, case studies, book reviews and opinion pieces.

All submissions should be related to aspects of learning and teaching, and will be subject to double blind peer review.

Current information about the submission process and guidelines for authors are available on the learning and teaching pages of the Solent website. Please feel free to contact members of the editorial board for advice.

KEY DATES

- Fri 22 June 2018 — Call for submissions opens
- Fri 28 Sept 2018 — Submission deadline
- Fri 2 Nov 2018 — Return of comments and notice of acceptance, after peer review
- Fri 30 Nov 2018 — Final submission deadline

For more information about Dialogue, please email **slti@solent.ac.uk**

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Editorial

Dialogue is a celebration of research and scholarly activity about teaching and learning at Solent University. This 2017/18 volume is testimony to the vibrant community of teachers, researchers, and scholars who contribute to evidence-led practice and research informed teaching. The innovative practice and scholarly research reflected here is a small feast at the community's pedagogic banquet. But if the reader is only in search of triumphs, with smiling teachers always singing praise to the Emperor, he or she will be disappointed. Because *Dialogue* is not about spin and 'fake news'. It is a space to explore troublesome questions and persistent challenges faced by students and teachers as they wrestle with what teaching excellence *really* means in 21st century higher education in the UK.

Academics from four out of the five schools at Solent have contributed to the journal, in addition to colleagues from Solent Learning and Teaching Institute. It is particularly exciting to have an external contribution and two submissions from Learning and Teaching Graduate Interns. The journal contains three sections: research articles, case studies and book reviews. I am grateful to each of the contributors, especially as I know that for each article and case study published internally, there was at least one higher education article published in a peer-reviewed journal externally in 2017/18.

Pam Pourzanjani poses a vital question in her article: 'Is intellectual curiosity a key predictor of academic performance?' Using validated surveys with a sample of final year students, she demonstrates that intellectual curiosity outstrips other personality and intelligence variables in garnering the laurels of academic performance. Motivation is also a predictor of academic performance. The study finds that students are not generally accurate at predicting their grades.

If intellectual curiosity fuels academic performance, the next article somewhat douses flames of enthusiasm about its presence. Using a mixed methods approach, Tilly Bellinger, Ashley Richards and Dawn Morley explore perceptions of attendance and engagement with a small sample of students and two lecturers. Their findings are inconclusive but slightly dispiriting. A key pedagogic tension seems to be the need to cover content versus building engagement through interactive teaching.

Enter stage left, Paul Joseph-Richard, who brings to life a raft of curiosity-inspiring ideas to motivate and engage students in research-informed teaching (RIT). Paul uses a novel method of crowdsourcing ideas at UCL's Research-Based Learning Conference in 2017, and two Solent community events. His article showcases practices which enliven content-driven approaches by enabling students to interact with knowledge, teachers, researchers, peers and the community. The framework he proposes for building research mind-sets breaks new ground.

'Firing the silver bullet of formative assessment' takes the discussion about deep learning and student engagement to the arena of assessment, arguing that over-reliance on summative

assessment has led to an instrumental educational discourse. In this study, 346 academics at eight universities indicate that authentic tasks and programmatic design are key strategies for encouraging formative assessment.

Assessment and feedback are subjects of three case studies, which brim with proven innovations. Danilo Venticinque's 'Love it, mate' is an honest look at using the Solent Online Learning forum tool to engage fashion journalism students in giving each other peer feedback every week. As the title implies, students initially struggled to give constructive feedback, but Danilo's interventions have led to a rich peer feedback culture. Peer feedback is the subject of James Hannam's case study 'With(out) a little help from my friends'. His action research project on a Level 4 music unit showed the value of students' discussing and evaluating a range of past papers. The peer review process was significant in improving students' writing. Similarly inspiring is Sabine Bohnacker-Bruce's case study of adapting the Pecha Kucha format for use on a business degree at the University of Winchester. The case study illustrates a successful example of authentic assessment used in formative assessment, mirroring business practice in the real-world.

Jean-Baptiste Souppez opens the window on an incredibly diverse, international cohort of students on the Erasmus Mundus joint Master's degree. He takes a two-pronged approach of aligning students' learning styles with his teaching strategies; and adopting innovative technology using lecture capture. He demonstrates that knowing your students and being pedagogically savvy with technology can have a powerful effect on the learning environment.

Dialogue ends with two book reviews. Claire Saunders entertainingly invites readers to contemplate the impact of the internet on the wiring of our brains in her review of Nicholas Carr's *The Shallows*. If you are puzzled, anxious, frustrated or even – dare I say it – distracted by what mobile devices are doing to the way students learn, or your teaching, then this is a 'must read' for you.

Bethany Ford invites us into the world of ethnography through reviewing Howard Goodall's dense and controversial *Writing the New Ethnography*. In her spirited discussion and critique of his work, she finds a combination of solace at useful insights into ethnography, and irritation at Goodall's occasional self-indulgent ramblings. Her conclusion, that the self as a researcher is inescapable in ethnography, is tempered with the view that the self can usefully be less obtrusive in good ethnographic writing.

A final word of thanks to the editorial board for their genuinely helpful peer reviewing and feedback to colleagues. Special thanks to Christel Pontin, the production editor, and to External Relations for their brilliant design and production work.

Tansy Jessop, Editor

Is intellectual curiosity a key predictor of academic performance?

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Abstract

This study aimed to build upon previous research by assessing various predictors of academic performance, namely personality, motivation, curiosity and learning approach. In line with the view of von Stumm (2016), the study additionally examined students' estimates of their performance, and whether these same variables predicted these estimates. Forty, Level 6, undergraduate students were asked at the beginning of the academic year to complete four questionnaires and to estimate their assignment grades for their core units. At the end of the year their Level 6 average percentage was sourced from exam board documents. Multiple regression analysis showed that autonomous regulation (a measure of intrinsic motivation) and need for cognition (a measure of curiosity) both predicted 25% of the variance in academic performance. Need for cognition also predicted 14% of the variance in the students' average estimated grades, but none of the variables predicted whether the students would under or overestimate their grades. It was concluded that intellectual curiosity is an important variable that should be considered as a key predictor of academic performance.

Keywords: academic performance; intellectual curiosity; motivation; personality.

Introduction

An extensive body of research is concerned with identifying the predictors of academic performance, a topic of interest for universities in the UK and elsewhere. Traditionally, intelligence and personality have been shown to predict how well a student will perform in their studies. However, researchers have also identified other variables that are associated with or predict performance at university, for example, approach to learning, motivation and curiosity. The current study aimed to build upon this body of research by investigating students' interest in new ideas and complex intellectual problems, their motivation to seek knowledge, their engagement with learning and their performance.

One predictor of academic performance (AP) that has been widely studied is personality, in particular the Big Five personality traits of conscientiousness, openness, neuroticism, extroversion, and agreeableness (Costa and McCrae 1992). Personality traits that are related to effort, persistence, self-discipline and responsibility would undoubtedly be helpful for students, and hence conscientiousness (C) has been shown to be a direct predictor of AP (Chamorro-Premuzic, Furnham and Ackerman 2006; Noftle and Robins 2007; von Stumm, Hell and Chamorro-Premuzic 2011). In addition to conscientiousness, von Stumm, Hell and Chamorro-Premuzic (2011) were interested in intellectual curiosity. Von Stumm's view is that 'intellectual curiosity is a

pillar of academic performance'(2016, p.373). Being curious about the environment leads to engagement and this then drives an individual to learn and to become knowledgeable. Von Stumm, Hell and Chamorro-Premuzic (2011) showed curiosity to be closely related to conscientiousness. Woo, Harms and Kuncel (2007) also showed that curiosity was correlated with conscientiousness, but also with the openness personality trait which Costa and McCrae (1992) note is associated with a need for variety, creativity and intellectual curiosity. This trait therefore shows similarities with a need to engage in cognition activities and how individuals are attracted to intellectually complex tasks i.e. curiosity.

Although others have similarly shown a relationship between curiosity and the openness personality trait (e.g. Arteche et al. 2009), its relationship to AP is less clear. For example, von Stumm, Hell and Chamorro-Premuzic (2011) showed a negative relationship between openness and AP, and Duff et al. (2004) found that openness did not predict performance at all. The research regarding this personality trait is therefore inconsistent and further analysis is required.

In addition to the relationship between measures of curiosity and personality, research has shown curiosity to be related to AP. In a meta-analysis, von Stumm, Hell and Chamorro-Premuzic (2011) showed that curiosity and conscientiousness were as good at predicting academic performance (usually Grade Point Average, GPA) as general intelligence. Chamorro-Premuzic, Furnham and Ackerman (2006) showed that curiosity was a better predictor of AP (particularly for essay and dissertation grades) than both intelligence and personality. These studies measured curiosity using the Typical Intellectual Engagement (TIE) scale which assesses individual differences in how people engage with the environment and their interest in intellectual problems (Goff and Ackerman 1992). Woo, Harms and Kuncel (2007) looked at two measures, both of which focused on intellectual behaviours emphasising variables like interest and engagement. In addition to TIE, they used the Need for Cognition (NFC) scale which assesses how much individuals enjoy cognitive tasks that require purposeful effort (Cacioppo et al., 1996). When compared, both measures were shown to be similarly associated with the Big Five traits, general intelligence and another measure assessing motivation and how respondents engage in learning-related activities (Autonomous Regulation). This study showed that the scales of TIE and NFC are interchangeable, as well as relationships between curiosity and both personality and motivation.

Von Stumm, Hell and Chamorro-Premuzic (2011), and Chamorro-Premuzic, Furnham and Ackerman (2006) both note that motivation is a variable that needs to be assessed as a predictor of AP. Black and Deci (2000) note that motivated behaviours vary in terms of how autonomous or controlled they are. The former refers to intrinsically motivated behaviours performed out of personal interest, while the latter are controlled by extrinsic rewards, i.e. studying to get high grades or for parental approval. Woo, Harms, and Kuncel (2007) assessed autonomous regulation (AR) and, as noted above, found this to be positively related to curiosity. This study did not however look at outcome measures, so it is unclear if AR would predict performance. However, due to the similarity between the traits of conscientiousness, curiosity and intrinsic motivation, it

could be suggested that AR would also be associated with academic performance, in the same way that conscientiousness and curiosity are.

Another variable that is closely related to curiosity, and has been widely studied in this area, is the student's approach to learning. Von Stumm and Furnham (2012) used the Study Process Questionnaire (SPQ; Biggs 1987) which assesses the three approaches of deep, surface and achieving. Deep learners typically show a keen interest in the topic area and strive to thoroughly understand the material, while surface learners tend to put in the minimum effort to pass their course and concentrate on rote learning of facts. Achieving students tend to be very competitive and are motivated to achieve high grades.

There are similarities here between these approaches and aspects of conscientiousness, openness, curiosity and autonomous regulation. Von Stumm and Furnham (2012) found that the deep and strategic approaches were positively associated with curiosity, and the surface approach was negatively associated with it. Only the achieving style was associated with personality, i.e. conscientiousness and openness. This study did not look at an outcome measure of performance, however other research has shown a relationship. For example, Chamorro-Premuzic and Furnham (2008) showed that exam grades were predicted by the deep and achieving approaches to learning, as well as conscientiousness and openness. However, other research has shown that GPA was not predicted by any of these approaches (Duff et al. 2004). Therefore, like openness, there is inconsistency in the literature and further research is needed.

The literature discussed therefore highlights relationships between academic performance and personality, curiosity and approach to learning, and that motivation is related to these factors. In addition to these variables, the current study was interested in students' inability to accurately estimate their academic performance, which is referred to by von Stumm as "unrealistic optimism" (2016, p.373). Poor performers tend to overestimate their ability as they do not realise how badly they will perform, while those who perform well underestimate because, although they know their own abilities, they overestimate other people in comparison (von Stumm 2016).

Both von Stumm, Hell and Chamorro-Premuzic (2011), and Chamorro-Premuzic, Furnham and Ackerman (2006) noted that there was a need to look at self-estimates of ability. Arteche et al. (2009) measured self-assessed intelligence (SAI) where their participants were asked to estimate a range of abilities (e.g. cognitive reasoning, verbal and numerical skills), noting that this was a measure of intellectual competence related to personality and motivation. They found that TIE was positively correlated with deep learning, openness and self-assessed intelligence, and negatively correlated with the surface approach. Along with being associated with TIE, self-assessed intelligence was positively correlated with openness, conscientiousness and the deep approach. However, they did not assess academic performance and although their measure of SAI was looking at participants' estimates of their abilities, it was not a direct self-estimate of university performance, i.e. grades.

Based on the previous research, the current study assessed whether the following variables predicted self-estimations of grades at the beginning of the academic year and actual academic achievement at the end of the year: conscientiousness and openness personality traits, intellectual curiosity, autonomous and controlled regulation, and deep and surface learning approach. Although many researchers have looked at the three styles of deep, surface and strategic, Biggs, Kember and Leung (2001) revised their questionnaire (R-SPQ-2F) to assess just deep and surface learners, noting that the role of the achieving style is less evident than the other two. The current study therefore only looked at these two approaches. In addition, the present study used the Need for Cognition scale (Cacioppo, Petty and Kao 1984) as the TIE was not available for research at the time of testing.

It was hypothesised that:

1. Academic performance would be predicted by conscientiousness and openness, a need for cognition, autonomous regulation, and a deep approach to learning.
2. There would be positive correlations between these predictor variables.

Based on the findings of Arteche et al. (2009), it was hypothesised that:

3. Student estimates of their grades would be predicted by openness, conscientiousness and curiosity.

Based on von Stumm's (2016) concept of 'unrealistic optimism', it was finally hypothesised that:

4. There would be a negative correlation between under and overestimations of grades and actual Level 6 performance.

Method

Design

A questionnaire design was employed, where the predictor variables measured were the conscientiousness and openness personality traits, approach to learning (surface and deep), autonomous regulation and controlled regulation (motivation), and the need for cognition (curiosity). The criterion variables measured were academic performance (average Level 6 percentage) and average estimated grade for core Level 6 assessments.

Participants

At the beginning of the academic year, 40 Level 6 undergraduate students (4 males and 36 females), with a mean age of 23 years (SD = 3.6), were recruited via an announcement in a lecture. All participants were studying a bachelor's degree in Psychology. Twenty-four were studying BSc (Hons) Psychology (mean = 22, SD = 3.1), three were on an Education specialism pathway (mean = 28, SD = 5.5), six on a Counselling specialism pathway (mean =24, SD = 4.2), and seven on a Criminal Behaviour specialism pathway (mean = 21, SD = 0.8).

Materials

Academic performance

Academic performance data was sourced from the exam board reports with permission from the participants. Each students' average percentage for their Level 6 units was sourced.

Personality

The personality Big Five Inventory (BFI-2; Soto & John, 2017) is a 60-item questionnaire to measure the Big Five traits of conscientiousness, openness, neuroticism, extroversion, and agreeableness. The responses are recorded on a 5-point Likert scale and sample items for the two subscales of interest are: 'I am someone who is persistent, works until the task is finished' (conscientiousness, C) and 'I am someone who is original, comes up with new Ideas' (openness, O).

Need for cognition (curiosity)

The short version of the Need for Cognition scale (NFC; Cacioppo, Petty and Kao 1984) is an 18-item questionnaire that assesses the participants' curiosity for learning. The responses are recorded on a 5-point Likert scale, and a sample item is 'I would prefer complex to simple problems'.

Autonomous regulation (motivation)

The Self-Regulation Questionnaire for Learning (SRQ-L; Black and Deci 2000) is a 12-item questionnaire to measure the participants' AR and controlled regulation (CR) for learning. The responses are recorded on a 7-point Likert scale and sample items are 'I will participate actively because I feel like it's a good way to improve my understanding of the material' (AR) and 'the reason that I will work to expand my knowledge is because a good grade will look positive on my record' (CR).

Approaches to studying

The Revised Two-Factor Study Process Questionnaire (R-SPQ-2F; Biggs, Kember and Leung 2001) is a 20-item questionnaire that assesses the participants' approach to studying. The responses are recorded on a 5-point Likert scale and sample items are 'I test myself on important topics until I understand them completely' (deep approach) and 'my aim is to pass the course while doing as little work as possible' (surface approach).

Grade estimations

A self-constructed questionnaire asked the participants to estimate what grades they thought they would achieve in the assessments for the core units at Level 6 using the University's standard grading scale. These were then converted to the corresponding percentage. The average of these estimates was calculated for each student, along with the difference between this average and their actual Level 6 percentage. The latter was calculated as a measure of under or overestimation of their grades.

Procedure

The project was approved by the departmental ethical committee. Once informed consent was given, the students first completed the Grade Estimation sheet, followed by the other four questionnaires which were presented in a randomised order. The students were informed that they could omit items or questionnaires they did not want to complete. Following completion of all or some of the questionnaires the students were debriefed following standard ethical procedures.

Results

Predictors of academic performance

Table 1 shows the Pearson correlations between the predictor variables of autonomous and controlled regulation, deep and surface approach, conscientiousness and openness, and need for cognition, and the criterion variable of Level 6 average percentage. This shows a significant positive correlation between academic performance and Need for Cognition (NFC), but a significant negative correlation with Autonomous Regulation (AR). These findings showed that higher performance was associated with a higher need for cognition but a lower autonomous regulation. A stepwise regression analysis confirmed these two variables as significant predictors of academic performance, $F(2, 33) = 5.52$, $p < 0.01$). This model predicted 25% of the variance in average grades. AR was the most significant predictor in the model ($\beta = -3.84$, $t = -2.71$, $p = 0.01$), followed by need for cognition ($\beta = 0.24$, $t = 2.22$, $p < 0.05$).

Table 1: Bivariate correlations between academic performance and all predictor variables

	AR	CR	Deep	Surface	C	O	NFC
Level 6 average	-0.37*	0.06	0.13	-0.02	-0.19	0.00	0.29*
Autonomous Regulation		-0.22	-0.04	-0.02	0.07	0.10	0.11
Controlled Regulation			0.02	0.33*	0.02	-0.44**	-0.51**
Deep approach				-0.10	-0.13	-0.12	-0.14
Surface approach					-0.11	-0.07	-0.41**
Conscientiousness						-0.19	0.02
Openness							0.52**
Need for Cognition							

*p < 0.05; **p < 0.01

Table 1 also shows the Pearson correlations between each of the predictor variables and shows significant positive correlations between surface learning and controlled regulation, and between

openness and need for cognition. Significant negative correlations were found between controlled regulation and both openness and need for cognition, and between surface learning and need for cognition. This showed that a higher need for cognition was associated with higher openness and lower controlled regulation and lower surface learning. In addition, higher controlled regulation was associated with higher surface learning and lower openness.

Predictors of estimated grades

Table 2 shows the Pearson correlations between the same predictor variables as above and the criterion variable of the students' average estimated grade for their core units. A significant positive correlation was found between NFC and estimated grades, and a significant negative correlation between the surface approach and estimated grades. This showed that higher estimated grades were associated with a higher need for cognition and lower surface learning. A stepwise regression analysis showed only NFC as a significant predictor of estimated grades, $F(1, 35) = 6.03$, $p < 0.05$). This model predicted 14% of the variance in the students' estimations (= 0.20, $t = 2.46$, $p < 0.05$).

Table 2: Bivariate correlations between estimated grades and all predictor variables

	AR	CR	Deep	Surface	C	O	NFC
Estimated grades	0.98	-0.03	-0.22	-0.38*	0.00	0.27	0.38*

*$p < 0.05$

Predictors of under and overestimations

To assess the extent of the students' accuracy in their grade estimations, the average Level 6 percentage was subtracted from the students' average estimation of their core unit grades. A negative score showed they had underestimated and a positive score that they had overestimated.

Table 3 shows the Pearson correlations between the same predictor variables as above and the criterion variable of under and overestimation. This shows a significant positive correlation with autonomous regulation, showing that higher AR scores were associated with overestimation of their grades. The stepwise regression analysis however showed no significant predictors of this variable.

Table 3: Bivariate correlations between under and overestimations and all predictor variables.

	AR	CR	Deep	Surface	C	O	NFC
Under and overestimations	0.31*	-0.13	-0.27	-0.21	0.11	0.23	-0.03

*p < 0.05

Correlations between estimated grades and actual grades

Pearson correlations were performed to look at the relationship between both measures of estimation (i.e. average estimation and under/over estimation) and Level 6 average. This showed no significant relationship between estimated average and actual average ($r = 0.13$, $p > 0.05$), but did show a highly significant negative correlation between under and overestimation and Level 6 average ($r = -0.76$, $p < 001$). The latter showed that the poor performers overestimated their grades at the beginning of the year, while those who performed well had underestimated them.

Discussion

Predictors of academic performance

The current study aimed to build upon previous literature regarding the predictors of academic performance and to assess students' estimates of that performance. The study found that autonomous regulation (a measure of motivation) and a need for cognition (a measure of curiosity) were significant predictors of the students' average Level 6 percentage. The hypothesis was therefore only partially supported as conscientiousness, openness and the deep approach did not predict academic performance. Curiosity predicting performance was consistent with the meta-analysis carried out by von Stumm, Hell and Chamorro-Premuzic (2011), and confirms von Stumm's (2016) view that intellectual curiosity is an important variable when looking at how well students perform at university.

The current study used a different measure of curiosity to many previous studies, but the findings remained the same, confirming Woo, Harms and Kuncel's (2007) view that the Typical Intellectual Engagement (TIE) and Need for Cognition (NFC) scales are consistent. Students who are curious about their environment are more likely to engage with their studies and are driven to learn and to be knowledgeable about their chosen subject area. Therefore, although the study was carried out on only one cohort of students and therefore participant numbers were low, the current findings confirmed that those students who showed increased curiosity were more likely to go on to achieve higher grades at the end of their academic year.

The findings are consistent with Chamorro-Premuzic, Furnham and Ackerman (2006) who also showed that curiosity was a good predictor of academic performance. In fact, they found that this

variable was better at predicting academic performance than the traditional variables of personality and intelligence. In the current analysis, the personality variables of conscientiousness and openness were not found to predict academic performance. This was inconsistent with the hypothesis and findings of various studies (e.g. Chamorro-Premuzic and Furnham 2008; Noftle and Robins 2007; von Stumm, Hell and Chamorro-Premuzic 2011; Woo, Harms and Kuncel 2007) that have shown a strong relationship particularly between conscientiousness and academic performance. However, Chamorro-Premuzic, Furnham and Ackerman's (2006) did note that curiosity was a stronger predictor of academic performance. In the current study, openness was shown to have no relationship with Level 6 performance with a correlation coefficient of zero. This is consistent with Duff et al.'s (2004) findings that similarly showed openness not predicting grade point average, and that the correlation between them was close to zero. The research literature is therefore inconsistent regarding the predictive nature of the openness personality trait, but the current study showed no relationship between having originality of thought and creativity and academic performance with this small sample.

The other variable that was shown to predict academic performance along with curiosity was autonomous regulation. It was hypothesised that students who are intrinsically motivated, i.e. high on the Autonomous Regulation (AR) scale, would achieve higher grades. However, although AR was a significant predictor of performance, it showed a significant negative relationship. Therefore, those students lower on the scale were achieving higher grades. Woo, Harms and Kuncel (2007) showed significant positive correlations between a need for cognition and autonomous regulation, openness and conscientiousness. All these variables are associated with being keen to learn new things, being effortful, being attracted to intellectual tasks, and motivated by personal interest, all traits that would appear to help students to achieve good grades.

Due to these associations and research that showed that these two personality traits predict academic performance (Chamorro-Premuzic and Furnham 2008) along with curiosity (von Stumm, Hell and Chamorro-Premuzic 2011), it was hypothesised that high levels of autonomous regulation would similarly assist students to do well at university. However, the opposite was shown by the analysis. It is possible that some students started the academic year (when they completed the questionnaires) being highly motivated by the subject area and wanting to increase their knowledge base for intrinsic reasons. However, as the year progressed the pressure of their final year may have led to increased anxiety and/or a reduction in their motivation levels and therefore subsequently affected their grades.

Other students may have started the year with quite low levels of motivation but maybe then received a few good grades which motivated them to progress further and so ended up achieving a high average grade. This is only a suggestion, as measures were not taken either throughout the academic year or at the end, but it would be interesting to reassess students at various points in the year to see if their motivation levels do change and to assess the reasons for this.

Although not the main focus of the study, previous research has shown inter-correlations between many of the predictor variables. In the current study, high need for cognition was associated with high openness, therefore consistent with Woo, Harms and Kuncel (2007) and Arteche et al. (2009), and lower controlled regulation and lower surface learning, the latter being consistent with Arteche et al. (2009) and von Stumm and Furnham (2012). A student who was intellectually curious was likely to also show high levels of creativity and a need for variety, along with less extrinsic motivation and lower surface learning traits like the desire to do the bare minimum to pass. Similarly, students who showed higher controlled regulation also showed higher surface learning and lower openness. Therefore, a student who concentrated on extrinsic factors to motivate their studies (i.e. grades or parental approval) was more likely to also be a surface learner and to show a lack of creativity and openness to new ideas.

Predictors of accurate grade estimations

In addition to looking at what predicted the students' average grades at the end of their year, the study was interested in grade estimations that students made at the beginning of that year. The findings showed that only curiosity was a significant predictor and not conscientiousness and openness, as hypothesised. Therefore, students who showed a high need for cognition were more likely to estimate higher grades, while those low in need for cognition estimated lower grades. If curiosity is related to AP as suggested by previous research (Chamorro-Premuzic, Furnham and Ackerman 2006; von Stumm, Hell and Chamorro-Premuzic 2011) and the current study, then it seems possible that those who reported engaging with their studies and having a drive to be knowledgeable were likely to also think that they would perform well in their assignments.

Conversely, those who reported low levels of these traits did not see themselves as achieving high grades. Although not a significant predictor of average estimates, surface learning was shown to be negatively correlated with this. This showed that students reporting more surface learning traits of just doing enough to pass and relying on rote learning were more likely to estimate achieving lower marks. Maybe those students who knew they were not putting in enough effort, appreciated that they would not be able to achieve high grades by the end of the year using this approach.

Based on the research by von Stumm (2016), the current study also examined a measure of the students' accuracy in predicting their performance. Von Stumm (2016) referred to 'unrealistic optimism' where poor performers tend to overestimate their ability, while those who perform well underestimate. The current study confirmed this pattern and the hypothesis by showing that the under and overestimations were negatively correlated with actual academic performance. The non-significant correlation between their average estimations and actual grades, showed that students were not particularly good at predicting their academic performance, instead those who performed well tended to believe at the beginning of the year that they would not be able to achieve that much, while those who did not perform so well initially overestimated their abilities. The regression analysis on this variable of under and overestimations did not find any significant

predictors but did show a significant positive correlation with autonomous regulation. Those students with high intrinsic motivation in the topic area predicted higher grades for themselves than they eventually achieved. This was consistent with the finding that AR negatively predicted academic performance in that the students who were highly motivated at the start of the year overestimated their ability. Maybe the students who had a keen interest in the topic and were motivated to perform well, believed that they would. However, this interest and belief may not have been enough to achieve the high grades that they predicted for themselves at the start of the academic year.

Conclusion

In conclusion, the study revealed that intellectual curiosity is an important variable when looking at the predictors of academic performance. It appeared that those students who were curious about their environment were attracted to intellectual tasks and were engaged with their subject area, were driven to learn and to become more knowledgeable, and that this pattern of traits and behaviours subsequently helped them to achieve high grades. In the current Higher Education sector, it is important for universities to be able to predict which students will achieve high grades and which variables affect this. By highlighting intellectual curiosity as a significant predictor, the findings suggest that universities, and their lecturing staff, need to develop and utilise modes of teaching and learning that encourage intellectual curiosity to enable students to achieve their full potential.

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Learning engagement: creating collegiality between lecturers and learners

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Abstract

During September 2017 – February 2018, two graduate interns conducted a mixed methods research study examining attendance and engagement within one school at a teaching intensive university. Through accessing questionnaires from 167 undergraduate students, and interviews with two lecturers, a wider view was accessed from both the student and academic perspective. The results highlighted the multiplicity of reasons that affected both attendance and engagement. It was found that students preferred a personalised and applied approach to their learning where pastoral support was integral to this experience. Despite differences in opinion in the use of the types of resources for learning, students and lecturers identified similar characteristics of learning that were found to be optimum for engagement. Recommendations are included as a result of the findings as well as the graduate interns' reflections of their first-time role as pedagogic researchers.

Keywords: attendance; student engagement; content-focused curriculum; interactive pedagogies; mixed-methods research.

Introduction

In September 2017, Solent Learning and Teaching Institute appointed 10 graduate interns to conduct research linked to academic development projects. This internship focused on the teaching processes within the university and researching how to support excellent learning for students. The 6-month internship had project work in a variety of pedagogic areas, with flexibility on which ones the graduate interns chose to be a part of.

Baker and Sela (2018) demonstrate the impact of providing work-based learning experiences for students working for the university itself. In their study of supporting student champions, they found that students articulated increased work readiness and confidence at the end of their experience.

In this research, the graduate interns were not only given the opportunity for work experience within a busy higher education department but addressed the increasing interest in ‘students as researchers’ as part of the research informed teaching agenda (Healey 2005; Walkington 2016). In recognition of this, this article presents both the research conducted and the reflections of the

graduate interns as new researchers in higher education. It was hoped that the graduate interns' recent experience of undergraduate study at the same university would allow them greater access to the opinions of the student participants within the research.

The idea of examining the reasons for student attendance and non-attendance was discussed with the graduate interns in relation to the university's strategy to enhance student engagement to ensure progression and achievement. The graduate intern authors volunteered to focus on a project to investigate both attendance and engagement as an area of interest to them. The purpose of the project was to find out the link between engagement and attendance, investigating students' attendance, along with their engagement with their lecturer and their classes. The research also examined pedagogic practice as students can be physically present, but not actively learning within sessions.

"When I first learnt about the project, I think we were both quite excited about it as it was something we were both interested in. From the beginning I think we both wanted to end up with a written piece of work that we could always look back on to see what we achieved during our time here. I think one of my immediate thoughts about looking at attendance figures for courses here, is how little it told us. All we could see were numbers that weren't always true representations of the attendance in a class, and nothing to do with why these attendance figures were the way they were. This is what guided us towards the engagement side of the project" (Ashley).

"I applied to the Learning and Teaching internship as I have always been interested in how students learn, and how assessment on courses could be improved. When we started working we were told that we would be working on a range of projects, but there were a few which were classed as being high priority. I had always been interested in attendance, as although my attendance was generally on the high side of average, I wondered why some people choose not to attend. This was then fueled by wanting to not only know why students did and didn't attend, but why they felt disengaged in classes. This project was then created to examine this and found some really interesting results!" (Tilly).

Literature review

Students' absence from their taught sessions at university is a global phenomenon (Barlow and Fleischer 2011; Mearman et al 2014) and the literature predominantly examines its effect on student attainment at graduation (Newman-Ford et al 2008). For the purpose of this research a focus was placed on attendance and ongoing engagement in taught sessions of students' courses.

Many factors were found to effect attendance and these include gender differences; male students have lower attendance rates (Woodfield et al 2006), the practicalities of other time commitments against university teaching (Mearman et al 2014) and even the position of the teaching session within the timetable (Newman-Ford et al 2008). Assumptions about the nature of universities' virtual learning environments replacing taught sessions present conflicting data

(Mearman et al 2014) with Copley (2007) finding that, although online materials were seen as supplementary to face to face sessions, students access to them negatively affects attendance rates (Mearman et al 2014).

In studies by Cohn and Johnson (2006) and Gysbers et al (2011), the allure of face to face teaching sessions is influenced by highly personalised student decisions related to how students view the importance of their attendance. These include the teaching style of the lecturer and how the student perceives their place in the social interaction of their learning (Gysbers et al 2011).

Although student engagement is multi-faceted (Bryson and Hand 2007; Trowler 2010) it "suggests positive engagement in programmes through active participation and interaction at a class level" (Evans et al 2015). A review of case studies across all disciplines by Evans et al (2015) found student engagement was mirrored in a greater student-led teaching approach that could affect both attendance and learning gain. The teaching strategies involved 'high impact pedagogies' or 'high impact practices' (HIP) with students.

The literature reviewed did not compare the perceptions of students and lecturers in the same teaching sessions on the reasons for attendance and engagement. It was decided to address this gap in the literature as part of the research.

Methodology

The research took a mixed methods approach where it was believed that "the use of more than one method produced stronger inferences, answered research questions that other methodologies could not, and allowed for greater diversity of finding" (Denzin 2010). In the first phase of the data collection, a questionnaire, distributed to students, contained both quantitative and qualitative questions to establish students' attendance patterns and preferred methods of engagement. The second phase consisted of semi-structured interviews with two lecturers to establish their views on engagement as triangulation with the first phase of data collection.

Before the research began, an ethics release was conducted in accordance with university guidelines and regulations. The aim of this study was to uncover the reasons for non-attendance in classes, as well as what creates an engaging class. The study was conducted within one school at the university. The research aim was to investigate the link between attendance and engagement within lectures and seminars at the University. It became apparent that the attendance of students could not solely be based on the figures from the data system.

Phase one of data collection

To investigate the research aim, a questionnaire of ten questions was devised, covering both attendance and engagement within sessions. Previous research on this area was used to determine possible reasons for non-attendance to be included in the questions. The questionnaire, where quantitative and qualitative questions appeared simultaneously, aimed to

be student friendly using questions in the form of the creation of tweets, alongside traditional questions with tick boxes.

Three courses were selected with the advice of the student achievement officers at the institution, and meetings were scheduled with the appropriate course leaders. It was then that the research was discussed in full.

The course leaders were asked to select the classes where they would like to have a deeper understanding of the attendance figures and features of engagement. It was also important to express how the research might benefit the course leaders, and their teaching staff, without criticising their approach.

When administering the questionnaires in classes, the researchers explained the questionnaire, what it was for, how it would benefit them and their peers, and that their answers would be confidential.

Phase two of data collection

Following on from the questionnaires, two lecturers were interviewed regarding their own practice and methods of engaging their classes. They were also asked to predict students' responses.

For the qualitative data, key themes were identified through NVivo categorisation. These were presented in word clouds in order to create a visual representation of the themes identified as most important to the participating students. Quantitative results were input into SPSS, and analysed for descriptive statistics presented through graphs.

"It was difficult making the questionnaire due to the wording ...this took a long time and was challenging as we had to make sure we were asking the correct questions and finding the direction we were taking the project in. We were pleasantly surprised by lecturers wanting us to go into classes, and to collect data from their students - they could really see the benefit of the research.

On the other hand, getting lecturers to agree and set up times for interviews was a problem we faced; looking back we could have widened our selection of lecturers we had contacted, and also begun this process earlier. We were originally going to use focus groups, however we decided that we had gained enough data from the questionnaire comments. In retrospect, we could have utilised these, given more time to gain a deeper insight into student views" (Ashley and Tilly).

Results and analysis

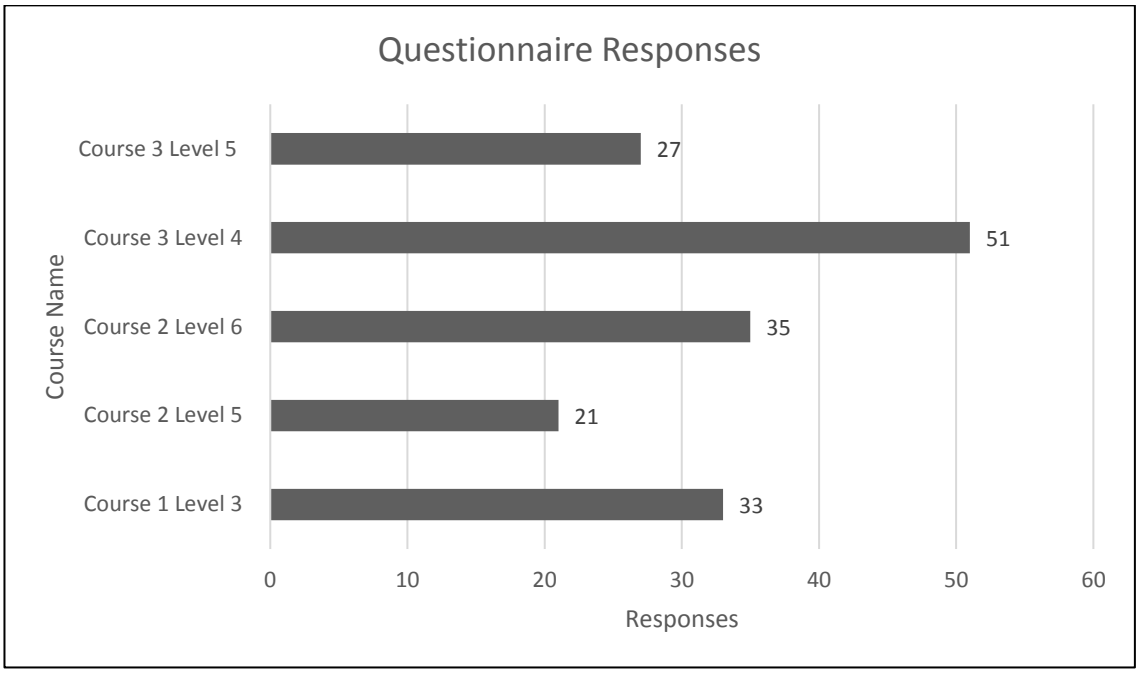

Figure 1: Number of questionnaire responses by course

Question 1: In your first month of this academic year, how many lectures would you say you attended?

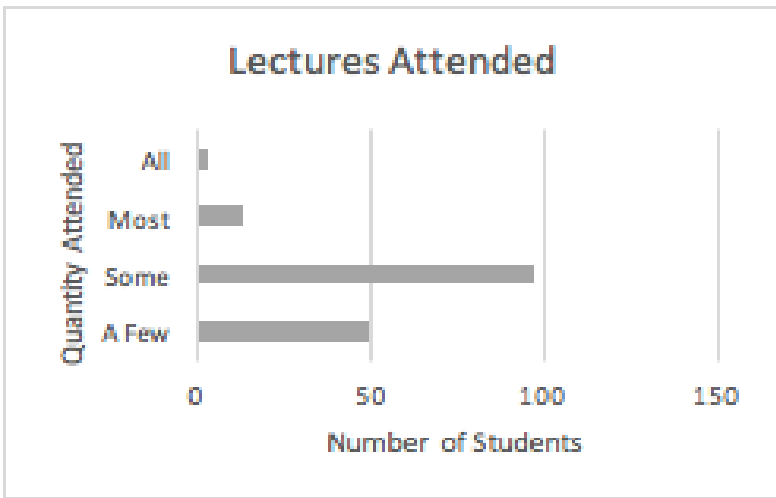

Figure 2: Number of lectures attended

Question 2: In your first month of this academic year, how many seminars would you say you attended?

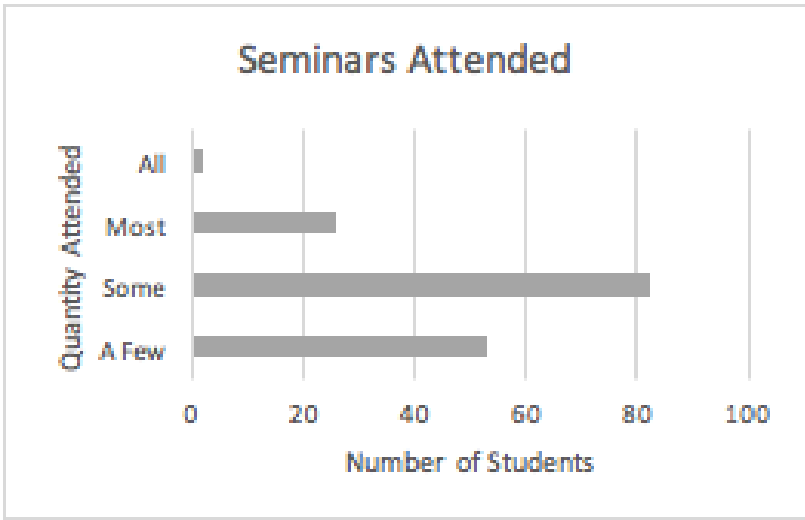

Figure 3: Number of seminars attended

Question 3: Does your attendance fluctuate through the term/semester? If so, please tick reasons why your attendance fluctuates.

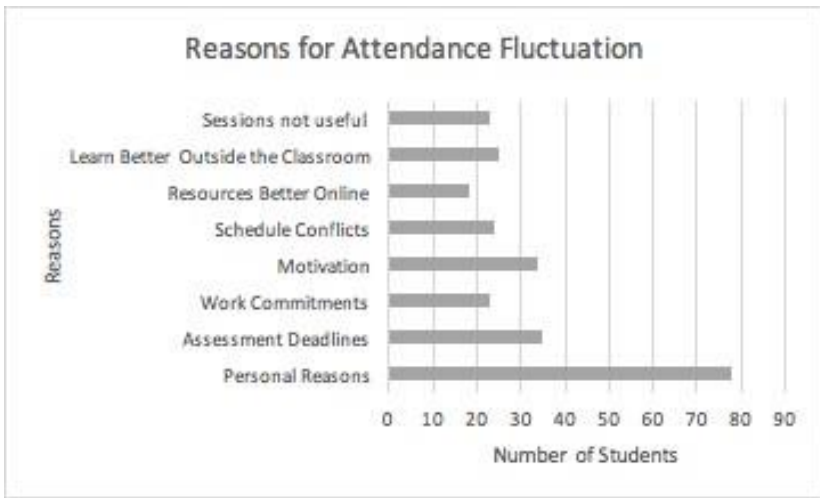

Figure 4: Reasons for attendance fluctuation

Question 4: Out of the following, please select the three main reasons which affected your attendance the most throughout your course.

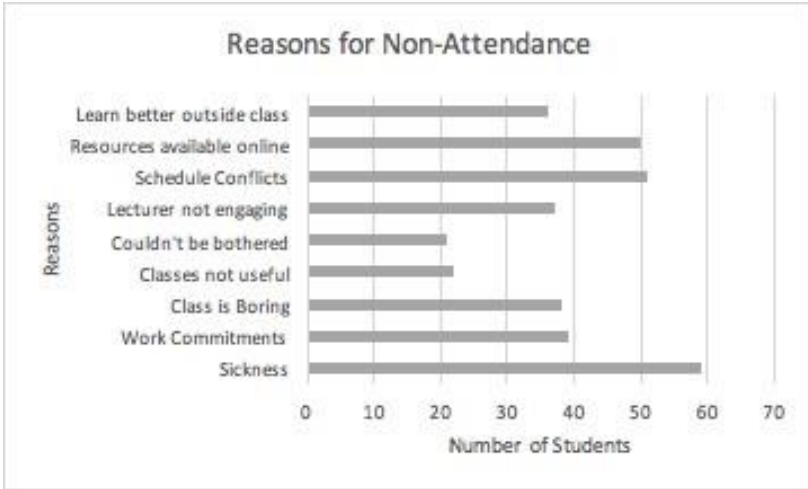

Figure 5: Reasons for non-attendance

Question 7: Are you expected to attend all timetabled lectures and seminars?

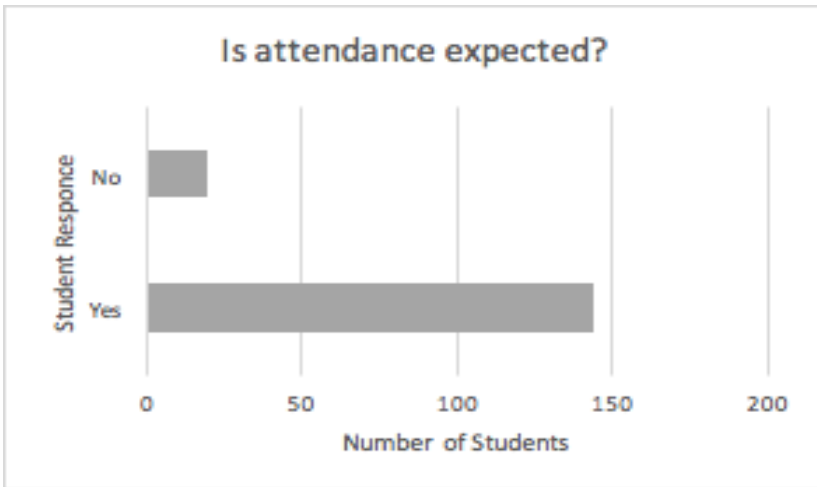

Figure 6: Expectation of attendance

Question 8: Please say if you are more engaged in group lectures, or seminar classes? Please give a reason.

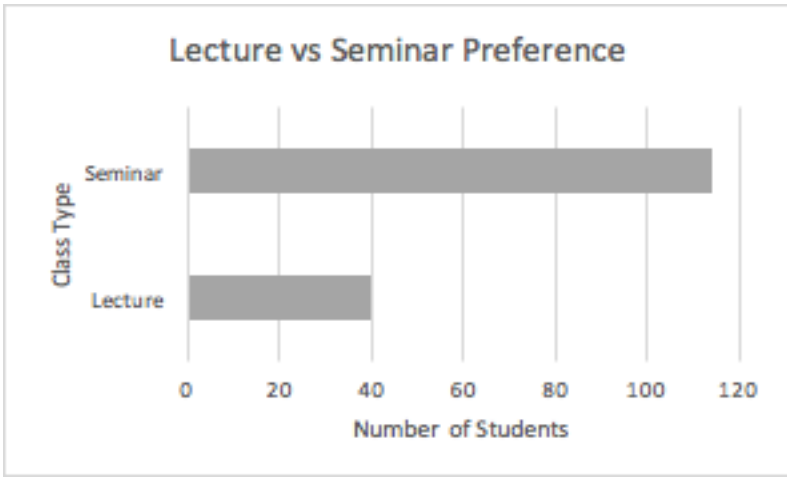

Figure 7: Preference of lectures and seminars

Question 9: How likely are you to access online resources when you have missed a lecture?

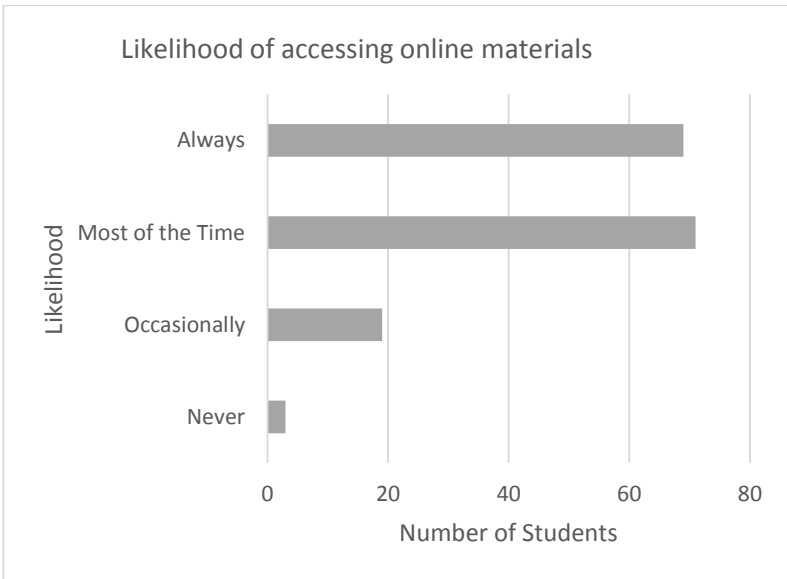

Figure 8: Likelihood of accessing online materials

Quantitative

The discussion begins by looking into the quantitative results coming from the students' responses to the questionnaire and will largely focus on the attendance portion of this study, with the focus on engagement coming from the qualitative comments.

Lectures are traditionally seen as the core method of teaching in higher education, and there is an expectation of attending these sessions. The results from Question 1 contradict this belief, with only three students reporting that they have attended all lectures so far.

Question 2 addresses seminar attendance; out of 167 students, only two responded that they have attended all seminars in the first month. This is despite the fact that 70% of respondents stated that they prefer seminar style classes.

When asked if attendance to their classes was expected (question 7), 88% responded that they are expected to attend all classes. For those that responded 'No' reasons included assessment deadlines, or that attendance is just strongly advised. Despite knowing that attendance is expected, it did not appear to impact the likelihood of students attending.

In question 3 students had to select the one main reason that generally meant they would not attend classes. Question 4 asked students to select the top three reasons which have affected their attendance over their course duration in total.

‘Personal reasons’ was the most cited reason (78) for attendance fluctuation although it was recognised that this is quite a general response and Question 4 uses more specific examples to increase the granularity. ‘Sessions not useful’ was one of the least cited reasons (23).

Question 3 asks if students perceive the available online resources as ‘better’ than attending classes, and therefore a reason not to attend. This option received the lowest number of responses (18). Within question 4, students were asked if ‘online resources available online’ was a reason to not attend, and this response received more votes (50), and it was similarly rated to ‘learn better outside the classroom’.

Two other leading responses within this question were ‘scheduling conflicts’ (51) and ‘sickness’ (59), which could also correlate with the accessibility of online resources, as it could allow for students to easily catch up on missed work.

Qualitative

We have used word clouds to show responses to questions 5 and 6. These illustrate the relative emphasis students gave to certain qualities by the size of the text.

Figure 9: Factors making classes engaging

Figure 10: Lecturer activities which aid attendance

Qualitative themes

Teaching style

From the questionnaires it was found that students preferred a lecturer with a more relaxed teaching style. Many students commented that they dislike when lecturers “just talk at them” and prefer it when they give “personal stories” displaying the attributes of a “friendly and fun lecturer”. Another student commented that “lecturers that are more casual in their presentation style are more engaging”.

In the lecturer interviews, learning tools were identified that engage students. Lecturers thought that an engaging class is “where [students] had a chance to engage in discussion with each other”. Students looked for relevance in their teaching that assisted them with their assignment. “Direct and indirect help” in sessions was seen as important with a need for tutors to “point to resources.”

The lecturer also explained some of the limitations of teaching content in a relaxed teaching manner. A presentation style was a necessity when there are “big chunks of material to get through quite quickly and you need to get through everything”. Having an open teaching style in the eyes of the student was important, however, the lecturer felt constrained by the need to prioritise content.

Lastly, this lecturer described methods they used for creating a relationship with students on a personal level both academically and personally. “Actually sitting down with a student in a seminar, and their working on their assignment” helps to encourage collaboration between the lecturer and their student. It was also suggested that this method was more productive as “sometimes you could sit there in a lecture and they won't understand, they won’t tell you, meaning they don't realise until you're sitting with them”.

By connecting individually in class, this lecturer conveys information more effectively to students. This was enhanced by also walking around initiating a pastoral role, “I'm level 5 leader so if somebody has a problem or they don't know something, they can just ask as I'm going around, so that has influenced quite heavily how I teach.” The lecturer used the time checking in with the students to not only encourage academic progress, but also personal development. This was contrasted by another lecturer, who described their teaching style as being based on meeting learning outcomes.

Teaching style was often mentioned by both the lecturer and students and the main attributes for an engaging lecturer were similar. However, it was apparent that taking a relaxed teaching approach would not be appropriate from a lecturer point of view for content heavy sessions.

Subject knowledge

This theme covered many comment types; from content of classes to lecturer knowledge and specialisms. Most of the comments were based around real world learning, which is one of the

main merits of the university's industry focused courses, with students preferring "lecturers which were able to relate course material to industry application with practical real-life applications". This allows for students to immerse themselves in the subject.

They also mentioned the use of guest speakers, and how they help to "relate to real world jobs and experience" making them "more motivational and engaging". This is echoed in a lecturer's response to what made their own experience as a student more engaging, "there were guest speakers and there were nights out with the lecturers, it was much more collegiate".

However, they also provided some insight into the limitations on engagement for students in the present day, "because of the financial pressures on students now there's not the same opportunities for engagement as there were back then". Aiming to "build that sense of collegiately" within groups proved difficult.

Both the student and lecturer comments show that students want to have specific talks and events relevant to their courses, in response to this, lecturers are trying to create a feeling of community and course activities in order to promote collegiality within their courses.

Additional materials and mixed media

Additional materials, and the use of varying media, was highlighted as one of the important factors that students would like to see to create interactive learning e.g. use of videos. When asked about what could be included to improve engagement in sessions, many suggested "More questions, interactive activities and fun quizzes".

When informed of this, one lecturer had a contrasting opinion, "I also like to include an activity, one of the things I would love to do more but students just won't engage with this for some reason".

The lecturer further explained the limitations faced with losing content in sessions. "I mean the thing is quizzes and fun activities are more fun, but a few of us in a lecture spend your life doing that where does the quality of the content come in?" Students also differ in terms of resource preference, "some people love the quizzes, and then if you do that you get comments that there's not enough content".

The use of handouts to aid learning was highlighted by students. In terms of this, one lecturer explained the cost issues associated with this resource. Lecturers felt it was not sustainable to provide this resource due to the number of students in classes, although students thought it would benefit them.

Humour

The idea of humour in teaching was significant especially in terms of strategies by lecturers to encourage students to keep attending (Figure 2). This was highlighted by students who mentioned lecturers who "engage with students, have fun and use banter"; students preferred a "funny"

lecturer who forms a relationship with them. Although one lecturer did not detail how they used humour during teaching in the interview, there were many comments from students commending their use of humour in their sessions.

Assessment relevance

Students said they find sessions useful when lecturers “provide help and information for the assignment”. Many students also commented that they would like to see “lecturers actually walking through the exam techniques” and not just telling them what to do. It really stood out that they wanted sessions to be relevant to exam and assignment technique and to improve their skills.

This was supported by a lecturer comment that suggested the barriers to engagement, “if it's not directly related to the assignment they're less enthusiastic about it, so it's engaging them when it’s not directly is more challenging.”

One lecturer highlighted that they found it difficult to get their classes to access reading on the online platform outside of sessions for the assignments. The lecturer said that they “would love students to read more, I would like them to engage with journals before third year” but there seemed to be a real struggle with motivating students to read more. However, this lecturer explained how they deal with getting relevant readings to students via Facebook. “They're doing a case study for their exam on *company* so if I find an article on *company* I'll go, here's a really interesting article on *company*" and post it on Facebook”. When asked why they think students engage more with Facebook as a tool for assignment reading, lecturer one said “Because it's on their mobiles, its accessible any time, ooh I've got a notification, wonder what it is!" This connectivity suggests a useful way that lecturers can use platforms such as Facebook to encourage assignment relevant reading.

"It was refreshing to write up results and discussion for a mixed-methods study. This was an area that was new to both of us, so we had to decide how to split the workload and work on areas that we may not have experienced during our undergraduate degree. It was not surprising that we discovered that students want to build relationships with their lecturers, and that these relationships have a vital role in their engagement during classes. It was also interesting to learn from lecturers what methods they use to keep their students engaged, and how they build relationships. A standout point on this theme was when both lecturers commented that they try to encourage those who have not attended for a while and chatting to see if there are any issues they can help them with. This is just one example of how these lectures build a relationship with students" (Ashley and Tilly).

Conclusions and recommendations

There is much conjecture and assumption around why students choose not to attend their classes. The research found that student attendance and engagement is a complex subject. Students paying course fees was not mentioned as a factor that increased attendance. Whilst

some of the points made by both students and lecturers aligned, in other areas there were differences. Students asking for materials in classes were seen as an unnecessary expense by lecturers. Students' requests for guest speakers were tempered by lecturers' opinion that these types of lectures are only successful and well attended if they suited the students' assessment timetable. This small study suggests that increasing dialogue between students and lecturers, to explore both needs and delivery of modules, would enhance partnership working between the two groups.

From the responses received, there are a multiplicity of reasons why these students are absent. Students reported that they would usually access online materials if they missed a class, and that online materials were a reason to not attend. Caution needs to be taken with these results that no assumption is made that online access equates to face-to-face teaching when students may only be using online materials as a repository rather than engaging in active learning. The reasoning behind students being absent from lectures and viewing online materials instead, could also be due to their preferred learning environment of being at home and would be worthy of further investigation.

The study highlighted common reasons that made sessions engaging for students. One of the main factors was the teaching style of the lecturer; students wanted a personalised experience, tailored to their needs. Humour was frequently mentioned. This research challenged the traditional power differences between academics and students; students requested teaching styles that were more akin to a personalised coaching approach rather than a transfer of expert knowledge. The important “relational aspects of education” (Bryson and Hand 2007) were demonstrated within this study. In addition, the teaching approach, where relevance and personalisation went hand in hand, demonstrates characteristics of ‘high impact practices’ described by Evans et al. (2015).

Students prefer being able to relate to their lecturer and the pastoral responsibilities of a lecturer was also mentioned both by lecturers and student as important throughout the course. The role of the personal tutor is important in this regard. The lecturer is a constant feature of a students' three year course at university and this is important as, despite issues students may face during their time at university, lecturers can provide a powerful and supportive relationship at a time of great change.

In terms of resources, hand-outs were frequently requested in comments from students. Academics also commented on the difficulties of trying to encourage students to read for their subject. This underlined students' potential responsibilities towards their own learning and it is recommended that a further study would benefit from an examination of students' perception of their independence and role within their own learning in higher education. The relevance of real world examples, and the potential of harnessing the expertise of outside speakers, created further potential for motivating students in their learning.

Given the nature of this research, the limitations of the research must be acknowledged. The study had a relatively small sample size taken from three courses from a single school and, despite an initial interest, only two lecturers were interviewed. This means that although student and lecturer views have been valuable in this research, they are representative of a small section of the learning community within the university. The student participants who contributed to the study were also the ones that were not absent and could be the students with better attendance rates generally. Restrictions of the timescales for the research, and poorly completed questionnaires, also effected the responses to the study. Despite using data collection methods to engage students, such as twitter, students preferred to complete questionnaires manually. It was felt, however, that the use of a mixed method approach to data collection did give a deeper interrogation of the research aim and triangulation of the quantitative with the qualitative data findings.

It became apparent during the interviews that lecturers thought student attendance was lower around assessment deadlines. Although this study was conducted at the start of the year, it was suggested that if it was repeated near assessment times, there would be a different outcome, with lower responses and attendance. It is recommended that to create a broader dataset, the study could be repeated in other courses and schools for cross comparison of findings.

Overall, the research highlighted the importance of the personalisation of students' learning to their learning experience and an important aspect of this, recognised by both students and lecturers, was the significance of support often integrated within the teaching. With students' absence from their teaching sessions came the risk that students lost out on the many informal opportunities that arose during timetabled sessions for coaching and development of their learning.

"Over the duration of this internship I have learnt more than I expected to. This project made me realise just how much more difficult it is to write now than as a student. I have found myself criticising my own work far more than I used to which has often made it difficult to write at all, and although I am still fearful of criticism of my work, I am more open to it than I was as a student, so I hope this will benefit my writing, as well as this project. I think if I ever write an article or report again, I will be sure to not be afraid of just sitting down and writing, and not worrying about if it makes sense, or sounds academic enough, and just try to remember that no one reads the first draft" (Ashley).

"Throughout my time as a graduate intern, I have learnt many things, one of the main lessons being that sometimes things don't go to plan! There were many times during this internship that I have had to collaborate and communicate with many types of people, and this has meant having my work read by others and accepting changes. It has been interesting to work alongside academics, interviewing them and building a working relationship with them. I have developed both professionally, and personally, and feel ready to go into a company with the skills I've gained.

In terms of the project, I have learnt that attendance and engagement is very important and very complex. There are no single factors which cause students to attend or not, and I believe by creating cohesion between academics and students, attendance and engagement can be improved within courses" (Tilly).

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Uncovering the many faces of research-informed teaching through crowdsourcing: a descriptive framework

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Abstract

Linking research and teaching in meaningful ways in higher education institutions (HEIs) remains challenging, because the nature of the assumed relationship between the two continues to evolve in complexity. However, many academics go about doing Research Informed Teaching (RIT) as part of their routinised practices, without labelling them as such. In 2017, delegates at an international conference on RIT held at University College London, and academics participating in two RIT workshops in Southampton Solent University were asked to share 'one big RIT practice' on a post-it note. These 130 handwritten RIT ideas formed the data for this study. Using framework analysis, the summarised data were charted into a descriptive framework of RIT strategies. The final practice-based framework reveals the many faces of RIT practised across many countries. This paper advances the use of practitioner voice in future RIT theorising and provides an alternative means of understanding the complex dynamics between the elements that constitute the practice of RIT.

Introduction

Recent HE reviews (Stern 2016) have heightened the need to link research and teaching in HE institutions. Although scholarly contributions on RIT are on the increase (Malcolm, 2014), to date there has been little agreement on what RIT means and how it can be implemented in classrooms. Interestingly, our understanding of the constructs 'teaching' and 'research' and how they are measured in policy contexts have also changed substantially in recent years (REF & TEF). These changes indicate that our understanding of RIT will continue to evolve in complexity and sophistication. Moreover, most RIT-related publications up to now have been conceptual in nature. There is a dearth of empirical studies examining research-teaching integration in practice. The evolving nature of the construct and the rapid increase of conceptual papers are, however, not necessarily having a notable effect on our knowledge about actual teaching practices that happen inside the classrooms. There is a need and an urgency to explore what teachers actually do in the practice of RIT. This study addresses this need by answering the question: What practices are used by teachers when doing 'research informed teaching'?

Conceptual background

Interest in understanding the complex relationship between research and teaching in higher education is longstanding and growing (Biglan 1973; Pelikan 1992; Coldwell et al. 2017). In recent years, there has been an increasing amount of literature on RIT in the form of summaries (Fung 2017; Barnett 2005) and case studies (Burgum and Stoakes 2017; Healey, Jenkins and Lea 2014;

Healey and Jenkins 2009). These have been useful in helping academics understand how students' experience of learning can mimic that of active researchers, within their learning contexts. The limited, but growing, number of empirical studies tends to focus on a range of RIT-related topics including, cultivating student expectations of RIT (McLinden et al. 2015), examining their awareness, perceptions and experiences of research (Healey et al. 2010), minimising risks involved in embedding RIT (Gresty et al. 2015), and exploring how disciplinary ways of constructing knowledge shapes academics' experiences of research, teaching and learning. More such studies are needed to expand our knowledge of RIT because much scholarly attention has been paid "to thinking about how the relationship could, or should, work, and to making it happen" (Tight 2012, p. 205).

Despite all this progress, scholarly debates about RIT are heavily influenced by a few popular frameworks, proposed by key contributors such as Healey (2005) and Levy and Petrulis (2007), to name a few. These scholars use two-by-two matrices to diagrammatically present the possible ways teaching and research can operationally be linked (See Figure 1). In essence, both these frameworks identify two types of approaches:

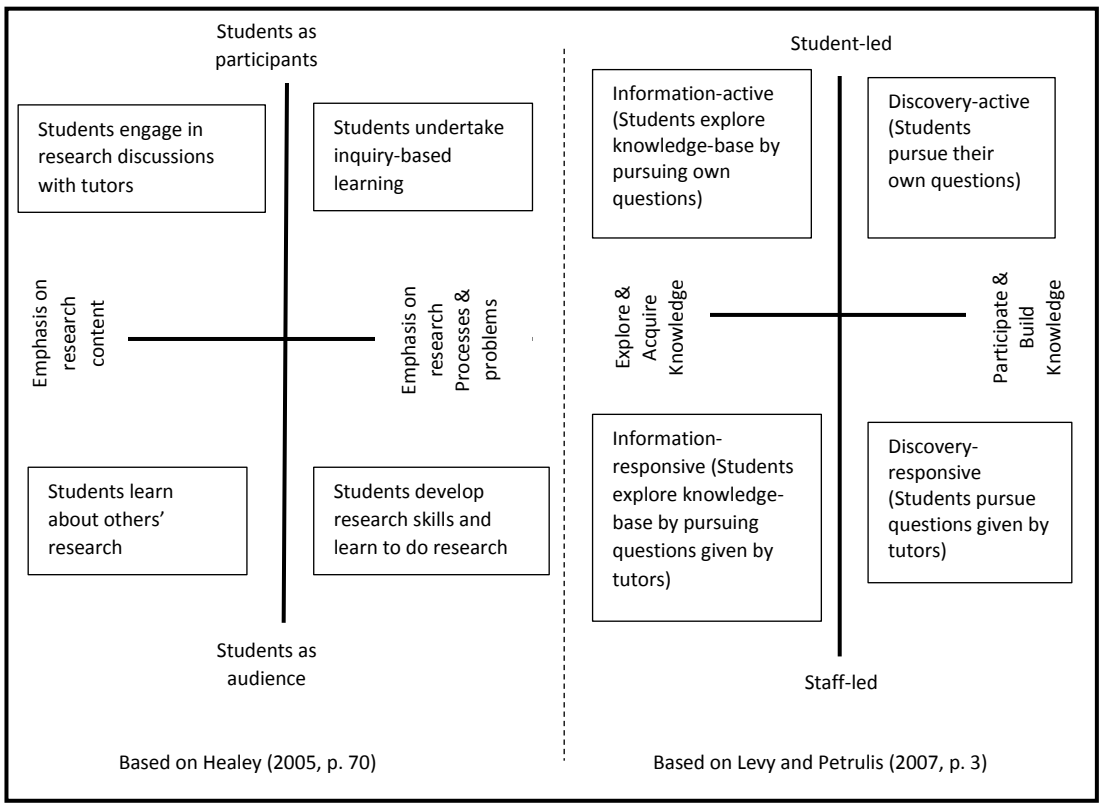

Figure 1: Current conceptualisations of research-teaching integration

The first type is comprised of teacher-focused approaches that treat students as an 'audience' or 'consumers of others' research'; the other type includes student-focused approaches that treat students as 'participants' or 'creators of knowledge'. In both frameworks, "learning that follows through engaging students in some of form 'inquiry' and 'research'" (Healey and Jenkins 2009, p. 2) plays a central role in enhancing the quality and outcomes, for both students and academics.

As "useful organising devices rather than conceptual models" (Malcolm 2014, p.293), these frameworks simplify the complex interrelations between teaching and research. However, an unintended consequence of these matrices is that some have begun to conceptualise the complex research-teaching nexus only in terms of these approaches. The numerous RIT pages of university portals are examples of this narrow conceptualisation. Moreover, these frameworks, besides presenting four separate, apparently disconnected quadrants, do not specify the importance of context.

As a result, novice practitioners tend to think that RIT is a compartmentalised experience that is context-independent. Considering the rich variation in our understanding of 'research' and 'teaching,' however, it becomes critical that we renounce perceiving RIT through the narrow windows of two by two matrices. It is important that we are prepared to see a broad canvas of rich practice-variations that can be found in classrooms, among those who practice RIT.

Turning the gaze on practitioners, therefore, holds the promise of stretching theoretical and conceptual attempts in the future. With the use of a novel method of data collection explained here, this study focuses on RIT practitioners and their practices.

Methodology

A novel data collection method, broadly in line with a method known as 'crowdsourcing', is used in this study. Online researchers have used crowdsourcing, which involves harnessing internet technologies to collect data, often from well-motivated, more ethnically and educationally diverse volunteers (Kittur, Chi and Shu 2008; Heilman and Smith 2010; Cole et al. 2009).

Behrend et al. (2011) argue that online crowdsourcing is a promising approach to collecting data from more representative samples, as this method has been shown to generate reliable data 'as good as or better than' other similar methods. Inspired by these findings, the author used a crowdsourcing method, but adopted a face-to-face approach, as opposed to using online tools, to generate data.

With the opportunity to meet 303 delegates at a global conference on Research-based Education, I adopted crowdsourcing with academics from universities across 15 different countries (Carnell 2017, Personal Communication). During a workshop on RIT, I asked participants to share 'one key practice' for promoting RIT, on a post-it note.

Likewise, later in the year, 35 academic staff, who attended two separate RIT workshops in Southampton Solent University in the South of England, were also asked to write down 'one

practice' of linking research and teaching in their classrooms. In all workshop sessions, participants were informed that an interactive exercise had been designed to collect their RIT practices with a view to publish them in due course and consent was obtained. Some ideas, collected from a comprehensive literature review (Joseph-Richard 2017), were presented to trigger their collective thinking processes.

Altogether, these sessions generated 130 handwritten notes. A framework analysis approach was selected for the data analysis because of its suitability to analyse cross-sectional descriptive data, and to enable the author to capture the different aspects of the phenomena under investigation (Ritchie et al. 2013). In line with published analytical procedures (Gale et al. 2013; Ward et al. 2013; Parkinson et al. 2016), these notes were typed on a spreadsheet and were numbered. After familiarising myself with the text, I used the pre-defined framework of themes and codes to group these predominantly one-line practice routines; after removing any duplicates, similar ideas were combined, and those that did not fit with the existing set of themes were grouped separately to reveal other unexpected aspects of RIT practice. I remained flexible and adaptive throughout the analysis in order to generate a richer description of the complex practice of RIT. The summarised data was then charted into a framework that provides an illuminating description of RIT practices across the globe (see Figure 2).

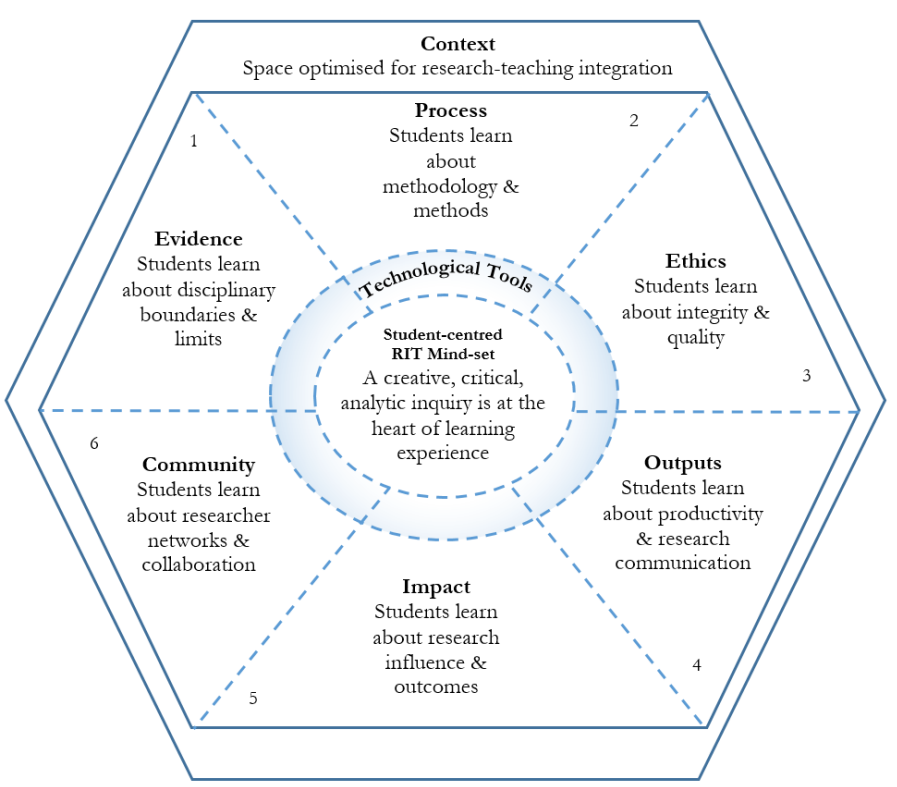

Figure 2: A descriptive framework of RIT in higher education institutions

The framework is described in detail in the following sections, specifying the practices in each category. In doing so, practitioners' own words have been used (in italics) in each of the domains in order to highlight the framework's rich empirical base.

The many faces of RIT: a descriptive framework of RIT

In Figure 2, the descriptive framework of research informed teaching is presented. First, at the centre of the six-sided hexagon, is the **RIT mind-set** that is student-centred and which enables teachers at every level to put 'a creative, critical, analytic inquiry at the heart of the learning experience.' The RIT mind-set is the growth mind set (Dweck 2016) that believes in the possibility of continuous development of teachers and students; it enables teachers keeping students at the heart of everything that they will be doing in an institution. This centrality is evidenced by students experiencing 'learning and teaching' as researchers might experience it because creative, critical, analytic inquiry guides all that is taught and learned. I will expand on the RIT Mind-set in detail later.

Second, this central core is surrounded by educational technological tools which enhance the processes of inquiry in order to promote student engagement in learning and teaching. These tools, from their intermediary position further integrate six different practice-domains (explained below), with the core of this framework. These tools give greater access to research evidence; accelerate research processes; encourage quality and trustworthiness of research; disseminate research outputs quickly; help promote impact of research, and connect students to a research community.

Third, with the help of technological tools, the central core is linked with six practice-domains; these are interconnected, mutually reinforcing sets of practices which give students a holistic experience of engaging in meaningful inquiries. Each practice-domain highlights a specific object of learning as detailed below:

- **Practice-domain 1: evidence**
  Students learn about disciplinary boundaries & limits
- **Practice-domain 2: process**
  Students learn about methodology & methods
- **Practice-domain 3: ethics**
  Students learn about integrity & quality
- **Practice-domain 4: outputs**
  Students learn about productivity & research communication
- **Practice-domain 5: impact**
  Students learn about research influence & outcomes
- **Practice-domain 6: community**
  Students learn about researcher networks & collaboration

Finally, all the domains including its core and the facilitative tools are situated in a specific context - a space that is optimised for research-teaching integration. What is depicted in the outer most part of the framework is a multi-layered context, in which an individual teacher, a team, a department, a directorate or an institution is situated in a specific time and space. Within this context, research informed teaching is played out in different ways, with a different emphasis and manifestations by individuals, teams, departments, directorates and institutions. The nature of the context influences how RIT is enacted, expressed and experienced at a given time, showing its many faces.

The description starts from the inner most part, namely research-mind set (the core). This is followed by a portrayal of the six domains: evidence, process, ethics, outputs, impact, and community. Each of these domains also includes the technological tools that could be used to facilitate practice of that area. In the end, the research context is presented. To illuminate each part, the crowdsourced empirical data are used in their raw form, so that the different faces of RIT become identifiable in practice contexts.

The core of RIT: inquiry based learning with RIT mind-set

The RIT core emphasises 'understanding'. There is a recognition that learning is complex and so is teaching; students are complex and so are teachers; classrooms are complex, and so are universities. Therefore, 'slowing down' is preferred to acceleration (Berg and Seeber 2016). A culture of 'questioning' facilitates development of students' curiosity, confidence, reflection, personal responsibility and criticality. For practitioners, this core looks like these:

- Slow down and give 'thinking' time during class (stop 'inputs' and allow 'process' time).
- Encourage a culture of questioning.
- Enable learners to discover; we are dealing with complexity all the time.
- Make students learners – help them learn to learn.
- Develop curiosity, it is important for both teachers and learners.

This inquiry-based learning is nurtured and sustained by teachers having a RIT mind-set; a mind-set that believes in continuous development; an attitude that searches for new possibilities; an openness that accepts the need for newer forms of research teaching integration.

- There is no one best way of doing RIT. It can take many forms.
- Broaden your definition of RIT. Do not say that prior to the popularity of RIT, all teachers were doing some type of content transmission work that is based on fortune cookies.
- Let your body show your enthusiasm for RIT.
- We do not fully know how to integrate research and teaching. It is OK to move on.
- Evaluate RIT – See what works for you and for students – Keep what is good – change what is not and start something new.

This positive core expresses itself in six different ways. As appearance is the function of human face, along with its other specific functions such as breathing, seeing, speaking, and eating, each practice-domain contributes to how RIT appears in a given context.

Each face – or practice domain - emphasises a specific object of learning (i.e. what students are expected to learn) and draws attention to how that object is taught in classroom contexts. Practitioners' own words, given in italics, expose the anatomy of each face of RIT.

Practice domain 1: evidence

In this domain, the emphasis is on proof. Students learn about what is, and is not, known in a particular discipline. They learn about disciplinary boundaries and limits. The curriculum is based on cutting edge research. Teachers might use their own projects and/or others' studies. The use of evidence in student work is appreciated in this domain; the strength of evidence is evaluated in class; and the limits of knowledge are questioned through innovative pedagogic methods.

Efforts to use evidence-based pedagogic methods can been seen in classes. An emphasis on relying on stronger evidence for making right choices in life is evident. This domain, similar to Jenkins and Healey's (2005) 'research-led' dimension, includes the following practices:

- Design and deliver 'evidence-based lectures' only.
- Demand evidence for arguments, opinions, debates, and assessments.
- Apply pedagogic research so that teachers use evidence-informed teaching techniques.
- Show history of subject – how understanding of 'evidence' has evolved in the discipline.
- In assessments and life, make them ask for 'evidence' and 'what is the strength of the evidence?
- Introduce subject-specific online databases early so that latest empirical findings are utilised in student work.
- Promote use of reference management software such as RefWorks, EndNote, Mendeley, Paperpile, Zotero, Citavi, and F1000 workspace.

Practice domain 2: process

In this domain, the emphasis is on the research processes. Students learn how to undertake systematic inquiries in their disciplines. They learn about selecting research topics, planning research projects, reviewing literature, understanding methodology and philosophical debates, selecting data collection methods, collecting and analysing data and writing reports.

The curriculum is based on approaches, tools and techniques that are essential for doing research. Teachers might use their own personal experience (of designing projects, and bidding for funds, for instance) or the experience of researchers and research students in undertaking research programmes.

Students' gain knowledge about the 'nuts and bolts' of designing, implementing and completing research projects in this domain. Efforts to use well-written literature reviews, well-justified methodological options, and how-to books can be seen in classes.

An emphasis on modelling 'excellent projects' and 'good practice examples' is evident. This domain, similar to Healey and Jenkins' (2005) 'research-oriented' dimension includes the following practices:

- Frame everything as a research question (design of units, lectures, assessments, activities, student support activities etc).
- Design curriculum that help students undertake projects with increasing levels of complexity.
- Invite PhD students, and staff researchers to present their problems and questions they are working on, and let students say what methodology and methods may be appropriate to find answers to the problems and questions.
- Ask students to devise a question for the author of a research article and email that question (Edith Cowan University, Western Australia).
- Use 'inheritance approach': "Each year students receive a body of work produced by the previous group of students and make improvements and additions to it; this process can be repeated until publishable materials are produced" (Chang, 2004).
- Use 'Ethos' 'e-theses online service' where 475,000 doctoral theses are available to learn how research is done.
- Introduce online tools for data collection (e.g. survey tools such as Google Forms, quantitative data analysis software (e.g. SPSS, JMP, SAS), qualitative data analysis software (FocussOn, Saturate, Atlas.ti, NVivo, QDA).

Practice domain 3: ethics

In this domain, the emphasis is on quality of research and integrity of researchers. Students learn about how to conduct research projects that are ethical, valid and reliable. They learn that ethics is more than committee approval, and it is about quality, objectivity and personal integrity.

The curriculum is based on ethical principles of research, stakeholders of research (e.g. funders, universities, organisations and individuals), politics and power in research, issues related to accessing organisations, debates on quality criteria, and academic integrity. These issues are closely linked to the 'process' domain seen earlier. The specific emphasis on quality and ethics in everything related to research projects show a different face of RIT.

Teachers might use their own or others' experience of meeting and managing challenges related to these topics. Students' learn to appreciate and use reflexivity in this domain. Efforts to use rigorous, sound, high quality projects as examples can be seen in classes. An emphasis on rejecting 'fake news,' 'assumptions' and 'opinions' is evident. This domain, not evident in existing frameworks and models (eg. Healey and Jenkins 2005) includes the following practices:

- Research is a political activity; teach them the politics of research.
- It is an age of 'alternative truths' and 'half-truths'. Let them learn what is valid and trustworthy.
- Improve academic integrity.
- Differentiate quality criteria and highlight they are also based on assumptions.
- Explore the basis of in-class interactions and ask them how they come to know what they know now.
- Use 'Turnitin' database to demonstrate what 'similarity index' look like and promote integrity.
- Critique a subject-related 'you tube' video to show how such user-generated content could potentially mislead students and the public.

Practice domain 4: outputs

In this domain, the emphasis is on research results and their forms. Students learn about the art and craft of producing outputs, such as conference papers, performances, exhibitions, and publications.

They learn about academic writing for publications, contents and structure of management reports, dissertations, journal papers and book chapters, possible outlets and criteria for evaluating different forms of outputs. The curriculum is based on strategies for writing, publishing and succeeding in a competitive space. Teachers might use their own and others' outputs as tools. Students learn to appreciate tangible outputs as a product of research performance.

Efforts to developing core writing skills, identifying best student assignments, actively seeking out for student collaborators, organising events, and starting print outlets can be seen in this domain. An emphasis on bringing out something worthwhile either individually or collaboratively can be seen in classes. This domain captures similar ideas to students as collaborators, co-creators of knowledge (Cecchinato and Foschi, 2017; Bovil, Cook-Sather, Felten, 2011). It is captured in the following practices:

- Co-publish academic papers with your students.
- Edit open source text books in the class and help them understand the value of such outputs.
- Make students write an outline of a paper they might write using references of recent papers and their own findings (Darden, 2003).
- Write practitioner-focused papers in journals published by professional bodies.
- Make them present their research in student conferences.
- Create student research blogs and help them publish their work online.
- Publish student research e-journal (see Gresty and Edward-Jones, 2012).

Practice domain 5: impact

In this domain, the emphasis is on the potential difference learning and teaching can make to individuals, groups, institutions and other organisations, societies and communities, and their policies and practices. Students learn about outcomes and impact of systematic inquiries.

They learn about what impact means to funders, and the public, what contribution that excellent research makes to organisations, and societies, how research impact can be measured and evaluated, and in what ways impact can meaningfully be shared to key stakeholders.

The curriculum is based on problems and challenges faced by the public, how academic research has enabled them to solve those issues, and changes that occurred as consequence of research. Teachers might bring in stories from personal, institutional or other repositories such as REF Impact case studies.

Students' develop an appreciation of impactful research in this domain. Efforts to bring in problem-based learning methods, case-study based techniques, and impact stories can be seen in classes. An emphasis on doing research that is relevant and meaningful is evident. This domain is similar to Walker's (2009) ideas that our campuses can be "as-if places" that incubate social change (p. 221). It includes the following practices:

- Start with a social problem and try to find relevant research.
- Use 'meet the researcher exercise' from Fung's (2017) book on Connected Curriculum and have students ask researcher about impact of their work.
- Talk about who researchers are, and who benefits from research.
- Don't stop with 'research'. Do 'outreach' (Research – Outreach programme).
- Offer local communities the opportunity to submit questions for undergraduate research' [resulting in a triple nexus, i.e. a research - public engagement - teaching nexus; Stevenson and McArthur, 2015].
- Use REF-Impact Case Studies online portal in teaching.
- Create an online repository of impact of students' research.

Practice domain 6: community

In this domain, the emphasis is on networks. Students learn about research collaboration among authors, departments, and institutions across national and international boundaries with a view to creating communities of practice.

They learn about how to identify collaborators, how to work in a research team, how to build community interactions for research, and the importance of exchanging ideas with colleagues, scholars and professionals.

The curriculum is based on approaches and techniques to build connected communities of practice – to share, learn, empower, celebrate variation in teaching, learning and RIT practices

and engage in inter-disciplinary, cross-cultural, multi-professional research that makes a difference to people's lives. Teachers might use their own networks or others' to initiate meaningful collaborations. Students' appreciate the value of reaching out to other potential collaborators in this domain.

Efforts to invite scholars and professionals to local conferences and events, for the benefit of initiating new connections are part of the community domain. An emphasis on relationship building is evident. This domain, similar to the ideas of Fung (2017) on the importance of urgency of 'connectedness' to foster RIT, includes the following practices:

- Knowledge sharing between staff about who is doing what could lead to cross-teaching and help direct students to relevant research (Pan et al. 2015).
- Systematically collect data about how many of your students are involved in research and publish a 'students as researchers' abstract book to facilitate collaborative working.
- Help them create new connections towards producing co-authored outputs.
- Let staff create multi-institutional projects and let everyone win in the context of REF.
- Create 'Students-as-Partners exhibition' in your university.
- Use 'Linked in' to connect students with scholars, subject experts, funders and professionals.
- Create research-based Massive Open Online Courses to disseminate findings of local research, while reaching out to connect with others.

Research context: A space optimised for research-teaching integration

Participants in this study have listed several practices to emphasise that it is important to get the context right if an institution is serious about promoting RIT. Practitioners endorse what scholars have long argued about context and institutional commitment to integrating research and teaching (Healey, Jenkins and Zetter, 2007; Schapper and Mayson, 2010; Brew, 2006).

For example, the need for a well-articulated institutional commitment to strengthen the links between research and teaching across the university, linking university reward systems and HR management practices, and ensuring that current workload allocation models encourage and reward staff who promote RIT (Schapper and Mayson).

The practitioners in this study are also concerned about concrete actions that might facilitate constructing a RIT context, sooner and faster. For them, senior leaders in their institutions must:

- Recruit and develop world class researchers, who are also interested in teaching'. [In an Estonian survey study, Magi and Beerkens (2016) found out that 'it is not only the research intensity of the teachers that matters, but it is their intrinsic interest in both teaching and research that seems to contribute most to the use of research-related teaching activities].

- Create curriculum model that embeds research progressively, from 1st year to final year (See for example: Fung (2017) Connected Curriculum at UCL).
- Systematically collect data about how many of your students are involved in research and publish a 'students as researchers' abstract book.
- Reward RIT good practice.
- Reduce the division between research-active and teaching-active staff'. There is some evidence of this tension in my country' [in Swedish universities Geschwind and Brostrom, 2014]
- Create RIT space that inspires research-teaching collaboration and organise RIT events in that space. Showcase the research-teaching integration.

In summary, the respondents insisted on the importance of specific contextual elements that might facilitate RIT in HEIs. With a clearer strategic orientation, adequate financial support and the collective will to create RIT culture, it may be possible to develop, sustain and transform RIT linkages. All practice areas are different faces of the same phenomenon and therefore, all can simultaneously be practised, with varying degrees, as appropriate and feasible in a given context.

This dynamism can be enriched the use of technology. Taken together, all the practices represented through the framework show a holistic picture of RIT that has a growth mind-set towards 'creative, critical and analytic inquiry' at the heart of everything that a teacher does in an institution.

Discussion

This paper uncovers the many faces of RIT and presents the multi-faceted construct in a descriptive framework. Thus, this paper makes an important contribution to the field of RIT theorisation, because development of the descriptive framework is "one step in the complex process of theory development in qualitative research" (Van Kan, 2010, p. 331). If RIT practices are assembled, this is what RIT looks like and thus this paper makes this construct conceptually clearer.

This new descriptive framework, derived from crowdsourced ideas on RIT practices, advances how RIT is conceptualised. First, by uncovering a set of 'faces' that give appearance to RIT, this framework allows us to comprehend the inherent complexity of research-teaching integration in HEIs.

Additionally, it places students' experience of learning at its core. The practitioner-generated ideas collectively present an evidence-based prescription for doing RIT. The paper advocates an effective reciprocity between research and teaching, for mutual enrichment of each other in practice contexts to optimise learning.

Second, this paper reconceptualises RIT. Unlike previous frameworks proposed by Healey (2005) and Levy and Petrulis (2007), the framework here does not advocate viewing RIT as a fragmented

set of activities, sitting in isolated quadrants that emphasise students' participation in some activities and their perceived non-participation in some others; instead, this framework advocates viewing their learning as a holistic experience that is intrinsically linked with different objects of learning. In this practice-based description, students are always active, because it is their learning that drives RIT practice.

Furthermore, most of the current conceptualisations tend to ignore the facilitative potential of educational technology for RIT. This framework allows us to recognise purposeful uses of these tools. Finally, in contrast to other frameworks, this framework magnifies the importance of context in RIT conceptualisations. It is the context which makes the difference in the enactment of RIT in HEIs.

Although the 'research environment' continues to enjoy its fair share of recognition in Research Excellence Framework (REF)-related policy documents, RIT publications appear to have paid scant attention to it. By turning the spotlight on the importance of context, the explanatory potential of this framework comes to life. In future, why RIT is practised (or not), and why it is practised in one way (and not the other) can now be explained in terms of the contextual differences practitioners and institutions encounter, such as teaching expectations, workload pressures, students demands, reward structures and other factors.

Limitations

This paper followed an opportunity-based design, in the place of the traditional ethics-committee approved design and this is acknowledged as a part of the problem with the crowdsourcing method. When collecting data from the event participants, the intention to publish the collected ideas was articulated and their permission obtained. It is also intentional to build the paper based only on the practice-based data, collected during the aforementioned events. This over-reliance on data from a small sample means that, first, this framework may not include all the possible ways of enacting RIT.

This is only as comprehensive as the data provided by the volunteers. For example, as Weller (2016), among others conceptualised, the possibility of teaching that informs research (designing research projects based on students' questions or on the professional challenges faced in the classrooms) does not feature in this framework.

Therefore, this framework need not be taken as a measure or a proxy of RIT excellence; and the second, this paper is heavily practitioner-focused and hence may be considered by some as theory-light. For example, since RIT is conceptualised predominantly as practice, social practice theory, as proposed by Shove, Pantzar and Watson (2012) could have been used to frame the contribution.

Future studies, based on relevant theories are therefore recommended. A full discussion of suitability of crowdsourcing as a method for data collection lies beyond the scope of this paper.

Nevertheless, this paper advances a new way of understanding the many faces of RIT, as found in global RIT practice today.

Conclusion

The multiple faces of RIT, unearthed from practitioners' accounts paint a new story of RIT which is enacted in specific contexts, is facilitated by technology, and is performed by academics with varying degree of emphasis on different objects of learning. This framework not only confirms much of what we knew from earlier conceptualisations but also uncovers more specific and particular details in relation to making creative, critical, analytic inquiry the centre of students' learning experience in HEIs, through various emphases. Importantly, it shows how these various dimensions are integrated into a whole picture.

The paper advances the use of practitioner voice in future RIT theorising and provides an alternative means of understanding the complex dynamics between the elements that constitute the practice of research informed teaching. The evidence from this study suggests that scholars can consider adopting an 'RIT-as-practice' approach for extending future theorisations. Academics, schools, institutions can make use of this framework as a guide to benchmark, measure, and evaluate the extent of their RIT practices.

If students' learning continues to be the driving force of RIT practices, then, it is possible for HEIs to play a key role in making students more creative, confident, and critical citizens of the future.

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Firing the silver bullet of formative assessment: a manifesto for good education

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Abstract

Formative assessment and feedback is the Achilles' heel of curriculum and pedagogy in higher education. For students, there is a prevailing sense that it is a waste of time to undertake activities which do not count; for staff, there is little attraction to adding more assessment and feedback to already packed modules. Besides, the reasons for doing formative assessment are unclear to many, while tactics for implementing it are elusive. Random efforts at formative assessment yield small gains, and even enthusiastic lecturers are inclined to abandon it, regarding it as troublesome, and paying it vague lip-service. The literature, however, has an altogether more robust view of the value of formative assessment, presenting it as something of a silver bullet. In this article, I explore approaches which underpin the practice of doing formative assessment, and tactics which participants in the 'Transforming the Experience of Students through Assessment' (TESTA) process have used to powerful effect. The study presents two compelling principles, and one potentially nullifying approach for encouraging formative assessment. These are authentic assessment; programmatic design and instrumental mechanisms. I argue that instrumental mechanisms simply feed grade-orientation and nullify the virtue of formative. Tactics which academics seem to value the least, that is requiring formative and using public domain tasks, may indeed prove to be the most powerful.

Keywords: formative assessment; programmatic design; authentic assessment; deep learning; student engagement

Why formative assessment is troublesome

The idea of the university as a place of expanding horizons and deepening knowledge is a flight of fancy when the purpose of higher education is a narrow one: to serve the needs of the knowledge economy (Collini 2012). Why would fee-paying students, aiming to get better graduate jobs, mess about with formative assessments when the 'real' deal is about getting credentials as the ticket to success and achievement (Arum and Roksa 2011)? This wider narrative imperils the formative project while promoting a culture of grade orientation and means-end thinking among students. Formative assessment becomes troublesome when it is difficult to persuade students of the virtue of doing tasks with no calculable reward for effort expended.

But there are other sticking points for formative assessment in institutional cultures. The emphasis on the planned curriculum, measurable outcomes and visible aspects of assessment within quality assurance, serves to underline the high value of summative assessment, while reinforcing the Cinderella status of formative assessment (Jessop, McNab, and Gubby 2012).

When formative assessment is discretionary and optional in the regulatory culture, it is inevitable that only wild enthusiasts will practice it, usually with minimal success given the wider culture, while most will pay lip-service. Having formative assessment written into planned curricula is likely to increase its visibility and ascribes it similar significance to summative assessment.

Visibility alone is not likely to make formative tasks welcome at the groaning table of summative assessments, however. The structure of modular degrees, with built-in transferability of credits, has led to each unit of study having at least one summative assessment point, but usually more, resulting in formative tasks being squeezed out. Modules have contributed to an 'assessment arms race' where very few academics willingly climb down from the proliferation of summative assessment tasks, because these act as 'pedagogies of control', extracting effort from students (Harland et al. 2015; Wass et al. 2015). Without summative assessment, academics fear that student effort will drain away faster than water from a leaky pipe. In the mind's eye of most academics, formative lacks the power to harvest intellectual effort.

These challenges alone may be sufficient to dampen the spirits of the most battle-hardened academic, but there is yet another. Not only are students averse to it, institutional cultures intractable, and modular degrees compounding, but for those who want to implement formative assessment it is not always obvious what good formative assessment looks like. Academics are in the proverbial dark room, negative in hand, about to plunge the paper into the chemical bath, with a fuzzy memory of what the original looked like when the shutter clicked. This article is precisely about developing the picture and enabling fellow academics to digitally master it in their disciplines.

Why formative assessment is vital

Formative assessment has the status of a silver bullet for student learning and engagement (Hattie 2009; Nicol and McFarlane-Dick 2006; Gibbs and Simpson 2004; Boud 2000; Sadler 1989; Black and Wiliam 1998). In spite of "definitional fuzziness" (Yorke 2003, 478), studies hint at some certainties about the nature of formative assessment. In line with common interpretations in the literature, TESTA defines formative assessment as that which does not count, is required to be done by all students, and elicits feedback, whether from the tutor, peers or through a process of guided self-reflection. Using this definition, the benefits of formative are manifold.

Formative tasks provide low-risk and frequent opportunities for students to learn from feedback (Sadler, 1989), with formative feedback having proven value for increasing learning gains (Black and Wiliam 1998). The process of undertaking challenging formative assessment and receiving developmental, rather than 'final word' feedback helps students to grasp the standards. Studies show that students learn most from feedback alone, and are diverted from attending to feedback by the presence of a grade (Black and Wiliam 1998). We know that students are often bewildered by written criteria and assessment briefs, and that there is a relationship between feedback and clarifying standards, but we also know that summative feedback arrives too late to help clarify

standards (Jessop, El Hakim and Gibbs 2014). Students are much more likely to fine-tune and understand what 'good' looks like through engaging in cycles of formative assessment and feedback without the diversion of a grade, and in advance of their work being finally evaluated (Boud 2000, Nicol and McFarlane Dick 2006).

In the climate of mistrust symbolised by anonymous marking, formative tasks provide space for relational, dialogic and personalised feedback, thereby placing value on students being known by their tutors (Nicol 2010; Pitt and Winstone 2018). In mass higher education, formative tasks are a rare space where tutors might begin to know their students and help them to develop without final judgements. Not only do formative tasks have the potential to revive the relational dimension of education, but they also provide welcome relief from 'entrapping' students in the 'web of consistency' imposed by learning outcomes (Biggs and Tang 2011, 99). Indeed, they enable students to think outside of the outcomes-box. Formative tasks invite risk-taking, experimentation, playful thinking and creativity.

Crucially, formative tasks give lecturers insights about how students are making sense of concepts, providing impetus and live updates for adapting their teaching (Hattie, 2009). Lecturers are able to spot conceptual black holes and common misconceptions among students before it is too late, and help them to reach understanding through revisiting troublesome knowledge. This is an underestimated and often hidden virtue of formative assessment, as student feedback to teachers "helps make learning visible" (Ibid, 270). Contrary to common perceptions, formative assessment, not summative, may be the strongest mechanism to encourage and distribute student effort (Gibbs and Simpson 2004). But in order to increase student 'time-on-task', lecturers need to know proven ways to design and execute formative tasks, and to pre-empt obstacles on the road to students engaging in these tasks.

Research methods

This study combines theory and data collected through the TESTA research process, drawing on case studies from 50 programmes in ten UK universities, involving research and change-oriented discussions with course and programme teams over eight years. The TESTA method involves three sources of triangulated data crafted into a case study which is discussed with course teams. The two sources of data which are prominent in this study are: first, the TESTA audit, which involves a conversation with programme leaders to understand and quantify assessment patterns module by module across the whole course; second, the team debriefing and discussion, when teams discuss their own practice in relation to evidence, bringing to light examples of best practice and discipline-based ideas for enhancing the assessment environment. Data from TESTA case studies and follow-up work with teams has provided exemplars of successful formative assessment approaches.

The second set of data is from academics (n=346) in eight universities, collected in workshops and presentations about their practices of formative assessment. Academics responded to a multiple-

choice question about how to encourage formative assessment in public lectures from June 2017 to February 2018, using the personal response software, Mentimeter. The question highlighted nine approaches to undertaking formative assessment, linked to theory about authentic assessment (Meyers and Nulty 2008; Ashford-Rowe, Herrington and Brown 2013) and to findings from TESTA (Wu and Jessop 2018). Academics were asked to identify the three most likely approaches to encourage formative assessment. The raw categories were: give it a grade; make it meaningful; require it; link it to the summative; make it collaborative; do it in class; use peer processes; make it a public activity; and reduce summative load.

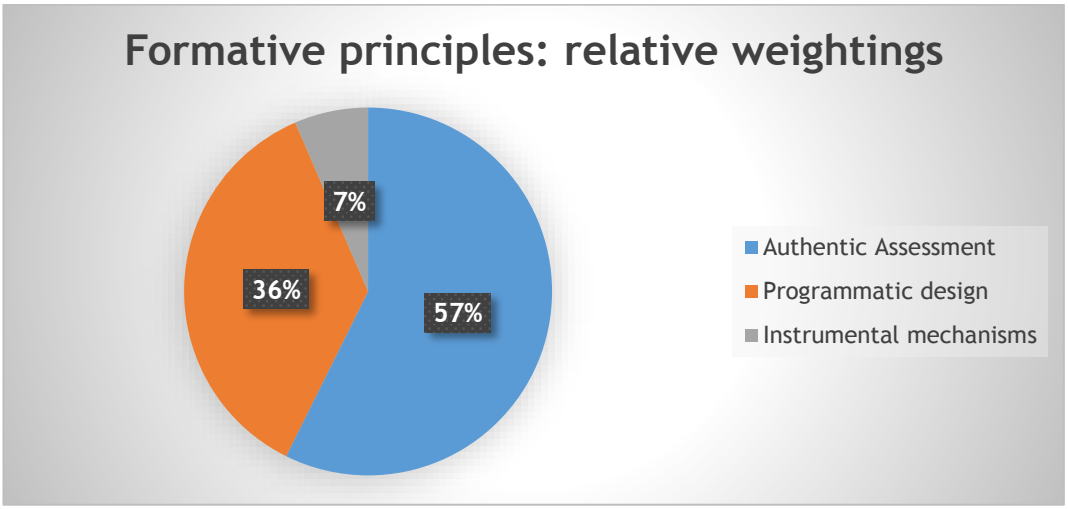
How academics encourage formative assessment

Academics responded to a survey about encouraging formative assessment which I used in public lectures and workshops. The discussion section will elaborate on the findings in relation to proven approaches from TESTA case studies. Here I report on and cluster results into three areas linked to approaches to encouraging formative. These are authentic assessment; programmatic design; instrumental mechanisms. Table 1 illustrates these approaches, the original items, and number of responses received.

Table 1: Approaches to encourage formative assessment

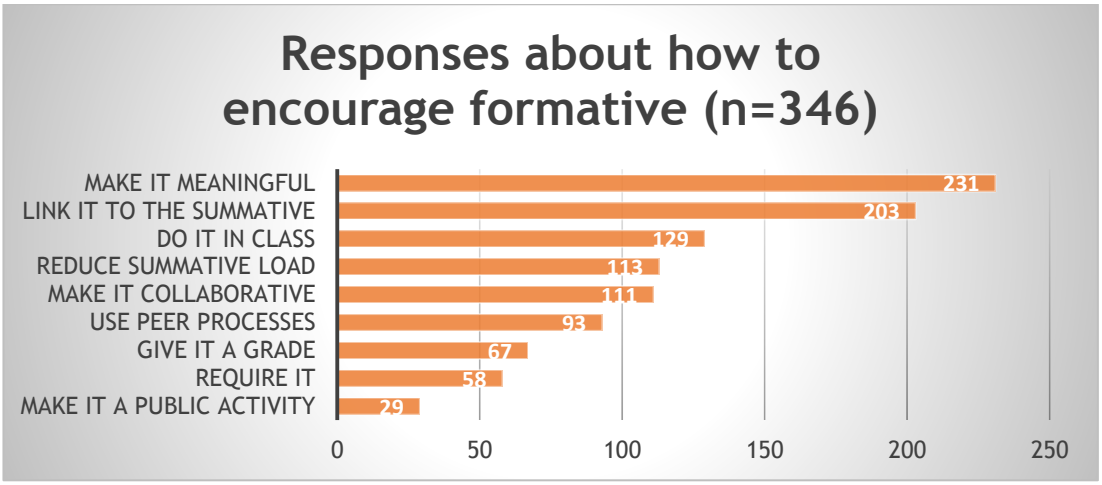
Approaches	Clustered items	Number of responses
Authentic assessment	Make it meaningful Make it collaborative Peer processes Make it a public activity Do it in class	593
Programmatic design	Link it to the summative Reduce summative load Require it	374
Instrumental mechanisms	Give it a grade	67

Graph 1 illustrates the overall weightings of responses:



Graph 1: Clustered responses in percentages

The disaggregated data by single items is displayed in Graph 2. The five strongest tactics for encouraging formative were to: make it meaningful (231); link it to the summative (203); do it in class (129); reduce summative load (113); and make it collaborative (111). These tactics combine elements of authentic assessment (meaningful, in-class activity, collaborative), with principles of programmatic design (reducing summative load and linking formative to the summative). The tactics which academics felt were the least effective were: making it a public activity (29); requiring it (58); giving it a grade (67); and using peer processes (93).



Graph 2: Responses from n=346 academics in eight universities

Discussion

Authentic assessment

Academics' responses underline the value of authentic assessment in engaging students in formative tasks which have no obvious currency in grades, credit or degree classification. 57% of responses fell into the category of authentic assessment. In the literature, authentic assessment is defined under the umbrella of authentic learning, which includes properties such as real-world relevance, mimicking ordinary disciplinary practices; ill-defined problems; complex tasks requiring sustained investigation; evaluating multiple perspectives; collaboration; reflection, and inquiry or research-based tasks (Lombardi 2007). Within authentic assessment, students encounter challenging tasks, they produce outcomes or performances for a real audience, learn to transfer knowledge across domains and discipline boundaries; and learn to use feedback (Ashford-Rowe, Herrington and Brown 2013; Fung 2017).

The sustained nature of authentic assessment demands sequencing, alignment of assessment to each other and the outcomes, and developing increasingly sophisticated tasks through the degree (Meyers and Nulty 2008). Increasingly, scholars describe authentic assessment as requiring students to move beyond the purely cognitive and intellectual realms to the conative 'will to learn' where they demonstrate their commitment, decision-making and ability to act on information (Lombardi 2007; Barnett 2007).

The cluster of authentic assessment items cover a raft of ideas: using peer processes and collaboration underlining the importance of social learning. 'Making it meaningful' is suggestive of real-world assessment, incorporating the relational virtues of feedback, challenging and complex tasks, and developing an inquiry-based mind-set. 'Doing it in class' has a number of authentic dimensions. Firstly, it de-privatises learning, placing it in an interactive space; secondly it re-invents higher education teaching as an interaction where students engage in intellectual effort rather than passively imbibing expert lecturer knowledge. Surprisingly few academics voted for 'make it a public activity' (2.8%) which suggests either that lecturers lack a repertoire of tactics for using public domain tasks or are reticent given perceived risks associated with placing students' work 'out there'.

The following three case studies drawn from TESTA practice illustrate some of the best examples of how course teams have adopted authentic assessment principles to implement formative tasks successfully. The first demonstrates the power of evaluating multiple perspectives, consensus-building through collaboration, and taking an inquiry-based approach, which are hallmarks of authentic assessment (Lombardi 2007):

Case study 1: Building student research capacities

Problem: *Students have not learnt to distinguish between different sources and evaluate various kinds of evidence.*

Task: *Students identify five sources about a topic. The kinds of sources are pre-specified. Students search for one book, one chapter, one peer-reviewed article and two popular culture articles.*

Seminar time: *Students make a case for their selection, justifying their choices. Groups reach consensus about the best sources.*

Possible next steps: *Lecturer uploads best sources to online pages.*

Outcomes: *Students learn to search for academic and popular articles; students read texts; students learn to justify choices using evidence; groups reach consensus about best sources; students' ownership strengthened and validated by lecturer uploading sources for wider use.*

Source: Dr Donna Peberdy, Film and TV, Southampton Solent

The second case study transforms a privatised assessment into a collaborative one, where students make meaning together in a two-stage exam, traditionally used for summative assessment, but used formatively here in a mock exam:

Case study 2: Using collaboration to build deep learning

Problem: *Most often, exams test students to be selective, strategic and to memorise. Exams are competitive, pressurised and privatised and usually occur at times when feedback opportunities are lost.*

Task: *The two-stage exam is normally used for summative assessments. It involves students completing an exam individually, handing in their script, and in the second stage, being assigned to groups of four, answering the same questions as a group in a loud, collaborative and exciting discussion and write up. The private task and group task are assigned different proportions of marks. Students always do better on the group task, second-time round.*

The adaptation: *Students undertook a two-stage exam formatively as a mock.*

Outcomes: *"Awesome". Students are engaged, and enjoy learning through self-explanation.*

Source: Dr James Fisher, Fitness and Personal Training, Southampton Solent

The third is completely in line with 'making it public', which was rated low in academics' survey responses. Public tasks are meaningful to students because they "produce outcomes or performances for a real audience". They are good examples of real-world learning (Ashford-Rowe, Herington and Brown 2013; Fung 2017):

Case study 3: Public platform blogging

Problem: *Seminars are silent. Lecturers are not sure whether students are reading and understanding academic texts.*

Task: *Students produce blog posts related to academic readings on public platform blog sites such as Blogger or Wordpress. The posts are personal, conversational and visual. Students are required to comment on each other's blogs in order to create threads. The summative assessment links to blog posts.*

Academic responsibilities: *Providing a selection of stimulating academic readings on a weekly basis; providing time for in-class blogging; booking rooms with adequate computer facilities for blogging; writing a blog; commenting on a sample of blogs. Setting a linked assessment: this may be a reflection on the best blog and on two other people's blogs – for example, one with which they disagreed or agreed.*

Student responsibility: *To read an article before coming to class, to blog in class and to comment on a specified number of blogs each week.*

Risks: *That a small minority of students refuse to blog. Prepare and provide alternative reflective task. It is self-defeating to offer it at the outset.*

Outcomes: *Students read and produce writing on academics texts; they read each other's writing; students begin to understand different writing genres; they get a greater command of theory in a conversational and personal way.*

Rationale: *"This is the most I've ever learned on any of my courses. I really enjoyed it. I wish we had done it from first year".*

Source: Amy Barlow & Tansy Jessop (2016), University of Winchester and Southampton Solent

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Programmatic design

The second compelling approach to engaging students in formative assessment is through programmatic assessment design. 36% of responses were linked to statements about programmatic principles for implementing formative assessment. Of these, 203 were about linking formative to the summative.

Building this link implies reducing summative to make room for formative in the context of high summative assessment diets (Jessop and Tomas 2017). Students are less likely to undertake formative, even linked to summative, on one module, if there are competing summative assessments on other modules (Jessop, El Hakim and Gibbs 2014; Harland et al. 2015).

The link between formative and summative is vital because students see the value of formative tasks leading into a future summative, especially with feedback feeding forward. 113 responses favoured reducing summative, representing 10% of the total responses. Reducing summative across the whole programme is an important strategy, but academics are often reluctant to embrace it. The reasons for this include a behaviourist 'will press lever for food' expectation that students will only work for graded assessment (Wass et al 2015), and the fear that students might fail a high-risk single assessment.

It is counter-cultural to risk reducing summative; it is also completely aligned with educational theories about challenging students to integrate knowledge rather than trivialising and compartmentalising it by going for bite-sized assessments (Chickering and Gamson 1987; Lombardi 2007; Carr 2010).

Only 5% of responses plunged in at the deep end of requiring students to do formative tasks. Yet setting high expectations of students so that they distribute their effort on meaningful tasks is a *sine qua non* of deep learning. For many academics, having the equivalent of a yellow or red card in their back pocket is one of the tactics they need to engineer a culture shift among more grade-oriented or reluctant students. Successful formative does not need to be punitive though. It often only requires an explanation of why formative is important, how it is designed on a course, and the pulse of good feedback to keep it alive and kicking.

The following two case studies illustrate some of the best examples of programmatic strategies designed to create a culture of formative assessment. The first case study grasps the nettle of taking a systematic, managed approach to rebalancing summative and formative assessment loads. It engenders a whole programme culture shift through the high-risk strategy of setting specific parameters for lecturers, much like NATO asking its members to lay down their nuclear warheads. To take the military metaphor to its logical conclusion: if formative assessment is the silver bullet, then evidence suggests that it is worth firing it.

Case Study 1: Reducing summative and increasing formative

Problem: *High assessment loads, very little formative assessment.*

Design strategy: *Departmental decision to limit each module to having one summative assessment, and to mandate incorporation of 3 x formative on each module. Ratio of formative: summative = 3:1.*

Troubleshooting design complexities: *Ensure that formative does not 'teach to the test', causing boredom and grade inflation. Provide support to lecturers in the design of formative which synchronises with summative but is challenging and stand-alone, yet conceptually linked to summative.*

Feedback: *Formative work is often peer reviewed in class, so that lecturers do not increase marking loads by having four marking occurrences (3 x formative plus 1 x summative) instead of two as prior to the intervention (2 x summative). Students learn self-regulation and evaluative skills.*

Outcomes: *Culture shift where students and staff get to grips with formative tasks.*

Source: University of Winchester Business School

The second case study is an example of assessment design which mimics the real world practice of drafting, editing and redrafting academic writing on the basis of formative feedback. The authentic nature of this assessment is amplified by requiring (and valuing) reflection on the task.

Case study 2: Linking formative and summative

Problem: *Students do not see the point of formative tasks, especially when feedback doesn't feedforward*

Strategy: *Students write formative essay in first semester of first year; they receive prompt, detailed and developmental feedback and rewrite essay using the feedback. Students write a summative reflection on how they have used the feedback, which is graded. They submit the redraft and reflection together.*

Outcomes: *Academics write meaningful developmental feedback; students use feedback to improve their work, and see the value of feedback for future tasks. Students learn that academic writing involves drafting.*

Source: University of Warwick

Instrumental mechanisms

67 responses suggested 'giving it a grade' would encourage formative assessment. While this low number equates to only 6.4% of the responses, it represents a challenge to changing the culture about formative assessment because it implies a diluted model of formative assessment, based on all the behaviourist levers of summative (Wass et al. 2015). The idea of 'giving it a grade' for formative assessment tasks has some traction in the literature about 'learning-oriented assessment' which may be either formative or summative assessment (Carless 2007). However, formative tasks which mimic summative to drive student effort risk being constrained by narrow expectations. Overall, pandering to instrumental approaches nullifies the agreed definition of formative assessment, and feeds the risk-averse grade-orientation provoked by summative assessment. It also diminishes the power of any formative feedback occurring alongside the grade (Black and Wiliam 1998).

Limitations

The study has focused on short one-off survey questions given in the context of public lectures. The questions and the data are broadly indicative of what academics think about formative, but they cannot be generalised. There is no necessary link between academics' perceptions of these options and what happens in practice. As most of the participants in Learning and Teaching Conferences and TESTA workshops are likely to be teaching enthusiasts, the findings may be skewed in the direction of favourable views of formative assessment.

Further research might explore adapting quality assurance mechanisms to foster a culture of formative assessment and investigating the value of a facilitative regulatory climate in bringing about culture change. Exploring strategies for developing a rich culture of formative assessment is particularly important in a risk-averse, metric-driven and marketised higher education sector. Among the strategies that are ripe for investigation are whether curriculum frameworks, the TESTA process itself, or continuing professional development are best suited to creating a wider embrace for formative assessment.

Conclusion

Engaging academics and students in formative assessment is a pedagogic challenge in a sector increasingly focused on the outcomes of degrees rather than the process of learning. There are no easy answers, but evidence suggests that where formative assessment succeeds in engaging students in learning and has strong articulation with summative assessment, teaching is more learning-oriented and interactive, and students have a more fulfilling university experience because they are stimulated to learn, beyond the summative assessment deadlines.

In 21st century higher education, critical thinking, complex reasoning and academic writing are under threat (Arum and Roksa 2011). Formative assessment is one way of injecting a counter-narrative into a discourse of higher education which sees credentials and graduate jobs as its *raison d'être*, fuelled by a diet of endless summative assessment. TESTA research provides

evidence-based alternatives and strategies for developing a stronger culture of valuing formative assessment through its emphasis on rebalancing formative and summative assessment.

The alternatives explored in this paper are twofold. Authentic assessment approaches have enormous power to motivate students without the incentive of grades since they are intrinsically challenging and pedagogically stimulating, driving student curiosity, autonomy and engagement. Evidence from academics suggests that public domain tasks are relatively unexplored. These outward facing tasks have the virtue of raising the bar through students observing peer work, gentle competition, and the invitation to contribute to disciplinary knowledge on a public platform whether through a blog, poster or conference presentation.

Programmatic design combines strategic thinking by teams about the sequencing, progression and increasing sophistication of demands across the programme. It also enables teams to take a long hard look at how much summative assessment clutters a programme, ousting formative assessment and making it seem like an uncomfortable wallflower at the Great Summative Assessment Ball. The tactics for getting formative on the dancefloor explored here are small beginnings, inviting more imaginative approaches to whole programme design. Taken together, authentic assessment and programmatic design are certainly good starting points for a new kind of educational dance.

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"Love it, mate": using the SOL forum as a peer feedback tool

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Abstract

This case study describes an experiment with the use of peer feedback to develop students' writing skills in a multiplatform journalism class. Students were asked to share weekly blog posts on the SOL forum and comment on their classmates' work. Though the initial round of feedback was superficial, an intervention helped students provide each other with constructive feedback. Students' perception of the peer feedback exercise was highly positive, as observed in data from their reflective logs and the Student Unit Evaluation (SUE) survey.

Keywords: fashion journalism; peer feedback; discussion forum; academic writing; action research

Introduction

This is an account of an action research project conducted in the first semester of 2017 with a cohort of twenty first-year students from the BA (Hons) Fashion Journalism at Southampton Solent University. As part of their teaching for multiplatform fashion journalism, a core unit in the degree, students were asked to use the Solent Online Learning (SOL) forum as a tool to provide feedback on the work produced by their peers in seminar writing tasks.

The majority of the group engaged in the exercise, with each piece receiving an average of five to six replies per task. In a second action research cycle, after a critical evaluation of student comments to each other, another intervention was made to encourage them to write more constructive, in-depth formative feedback to their peers.

This case study will expand on the theoretical and practical reasons that inspired the action research project, describe and analyse both action research cycles, evaluate their outcome and propose changes to be made to the unit in the future.

Background

This action research project was motivated originally by student complaints about the lack of feedback on their writing tasks. This was observed both in conversations with student reps and reiterated in informal mid-unit anonymous feedback. Due to its practical nature, multiplatform fashion journalism requires students to produce at least one piece of writing every week during seminars, for either print, online, audio, video, social media and other platforms. Their main learning outcome is to understand the differences between such platforms and develop the skill

to write effectively for each of them. The lack of feedback on their work made it less likely for them to achieve such outcomes.

Although increasing the amount of formative feedback from their tutor could be a way of addressing their complaints, research suggests that such an approach could find limited success. Yorke (2003) warns about the possibility of students becoming dependent on tutor feedback, instead of learning to reflect on their own practice to improve. Nicol (2010) argues that written feedback by tutors, due to its monologic nature, tends not to elicit engagement by students and call them to act on the feedback they received, even when tutors spend a significant amount of time on their feedback. The author goes on to suggest peer-to-peer interaction as a way of increasing students' engagement with the feedback process. McConlogue (2014) agrees on the shortcomings of tutor feedback and also defends the adoption of peer feedback as a way to overcome such limitations.

In order to improve the amount of feedback they received on their writing tasks in an early version of this unit, in January 2016, I attempted to incorporate informal formative peer feedback into their seminar sessions. After completing their task of writing a 200-word blog post, students were asked to swap chairs with a classmate, read their work and make comments on what could be changed. Although the use of peer feedback on that occasion seemed to have a positive effect on the accuracy of their writing (Venticinque, 2016), the informal nature of the exercise made it harder to for them to perceive the value of peer feedback: in a questionnaire conducted with the same group six months later, none of them perceived such discussions as something that helped them with their writing.

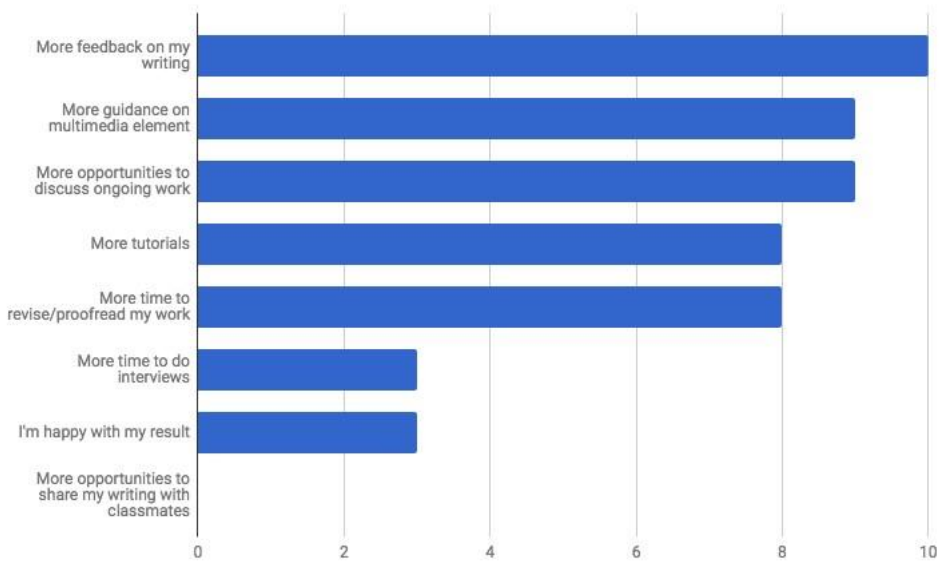

Figure 1: Results from questionnaire n=22 multiplatform fashion journalism students

More importantly, research shows that there are reasons to question the quality and accuracy of peer feedback (Cho & Schunn, 2007), which can be problematic when feedback is given in an informal setting and the tutor is not aware of what comments students make on each other's work. There is also the concern that students are likely to provide vague feedback or focus on surface-level changes unless instructed on how to provide feedback to their peers (Grez, Valcke & Roozen, 2012).

Based on these concerns and on the limited experience I had with peer feedback, I followed the steps in the action research spiral (Zuber-Skerritt, 2001) to develop an intervention that addressed the following issues: 1) How can I implement peer feedback into seminars in a formal, structured way in order to increase the likelihood that students will perceive its value? 2) How to keep track of comments students make on each other's work, to ensure they are not receiving inaccurate or unhelpful feedback? And 3) How can I improve the chances that peer feedback will be effective and have a positive impact on students' work?

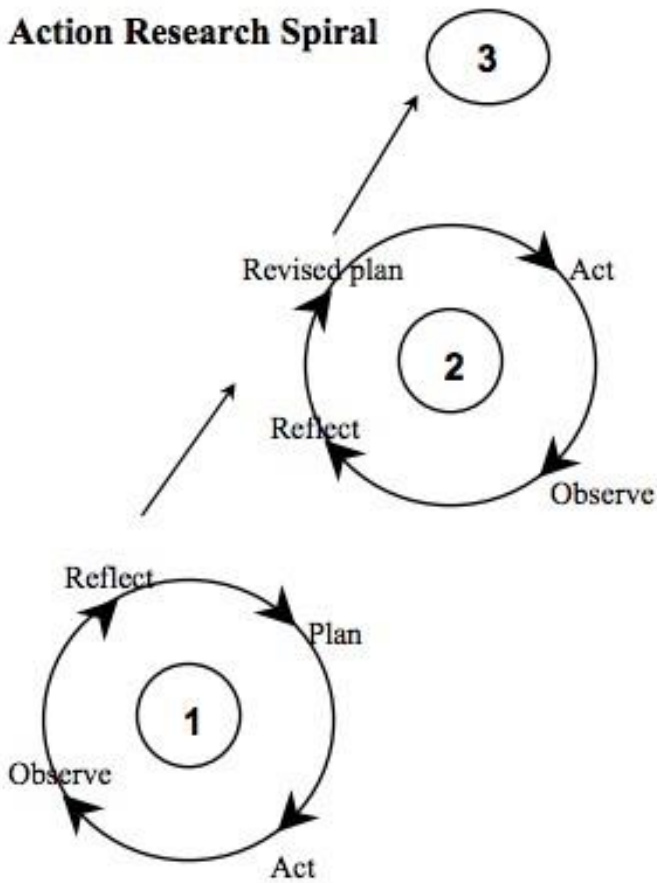

Figure 2: Action research spiral (Zuber-Skerritt, 2001, p. 15)

First cycle: introducing the SOL forum as a peer feedback tool

I decided to adopt the SOL forum as a tool for peer feedback because it allowed me to have a written record of the comments made by students on their peers' work, in case there were concerns about the tone and accuracy of their replies.

The forum's structure also allows each student to receive replies from several classmates instead of just one: research strongly suggests that receiving feedback from multiple peers leads to more improvements than receiving feedback from only one person–either a tutor or a single classmate (Cho & MacArthur, 2010).

In the pitch session before the action research was implemented, some lecturers raised concerns about lack of student engagement with SOL and mentioned that students were unlikely to use the forum.

In an attempt to prevent that from happening, I decided to save the final 20 minutes of each seminar for them to post their work on the forum and comment on each other's work, rather than having them use SOL independently after the class.

The attempt seems to have been successful: contrary to what was expected by my colleagues, students seemed eager to engage with SOL for peer feedback. On average, each student received five to six comments on their course work after sharing their writing on SOL. In the first five weeks of the course unit, the 20 students in the class produced a total of 521 comments offering formative feedback on their classmates' work.

I attribute their engagement largely to the fact that students used SOL in class rather than in their own time. I tested this assumption by making peer feedback an independent task in week six rather than asking them to do it in the final 20 minutes of the seminar.

Out of 16 students who attended seminars that day, only seven shared their work on SOL and the average number of comments received dropped to two: a significant decrease in engagement compared to previous sessions.

Although engagement ultimately was not an issue, the initial concern I had about the quality of feedback provided proved to be at least partially justified.

Despite being asked to provide useful, in-depth feedback on their classmates' work, some students' replies offered very little insight into the writing of their peers. A few examples: "*Love it mate*", "*Well done*", "*Fabulous*" and "*Yes mate go on*"—all four posts being taken verbatim from the week one forum.

Other students offered insight into what they liked about their classmates' writing, but their comments remained entirely positive, offering no actionable constructive feedback or suggestions for improvement. An example is this feedback comment, also quoted verbatim from the week one forum:

> *…firstly I really like the design of your blog and the chunky black text you have chosen, it ultimately makes it more comfortable and easier to read. K.I.S.S has been applied and it really is short 'n' sweet. The writing style is friendly, welcoming and honest well done! P.S I can't wait to see your dog.*

Very few students made suggestions for improvement, most of them focusing only on small issues of style or grammar, rather than offering deeper insight into the structure and content of the piece. An example of such superficial formative feedback, quoted from the week one forum:

> *I really love your personality and your writing. What makes me wonder is the choice of the picture, I don't think it matches with your writing, you should include a picture of yourself.*

The underwhelming quality of the feedback provided by students in the first cycle of action research seems to confirm the idea that students should receive training to enrich the peer feedback process and ensure that they know how to assess the work done by their classmates (Grez, Valcke & Roozen, 2012).

After observing these results and reflecting on the aforementioned research about the need for training students to provide quality feedback to each other, I revised my plan for the second action research cycle in order to address the specific issue of improving the quality of feedback comments written by students.

Second cycle: improving the depth and quality of student feedback

The main intervention in the second cycle of the action research project was a 15-minute session at the beginning of the week two lecture. In the session, I reiterated the idea that feedback should be specific and help their classmates improve their work. Since some students had shown concern that their constructive feedback remarks could be taken personally by their classmates, I also introduced them to the feedback sandwich method (Docheff, 1990), designed to combine positive and constructive feedback in order to offer suggestions for improvements without discouraging learners.

Figure 3: Four slides taken from the 15-minute lecture on how to (and why) deliver effective feedback

After the lecture, I also had short, informal one-to-one talks with students who seemed to still be struggling to provide constructive feedback on the work of their peers, encouraging them to be specific in their comments and make suggestions for improvement.

In the following weeks, I maintained the habit of starting each lecture with a short session commenting on the quality of the feedback they gave to each other, as well as pointing out issues

that they might have missed and calling to their attention when the same mistake was being made by the majority of the group—since in those situations peer feedback was unlikely to help them.

The quality of the feedback increased drastically after the first intervention. Many students immediately followed the suggestion of combining positive and constructive feedback, such as in this reply to a post by a student whose first language is not English:

> *Your middle paragraph really moved me and brought a little lump to my throat. Thank you for sharing this glimpse into your insecurities. I can almost guarantee you that each one of us has had similar doubts about our abilities within the scope of this course.*
>
> *Some suggestions and corrections that you may wish to make:*
>
> *Change 'advices' to 'advice'*
>
> *Change 'capable' to 'able' and 'before we' to 'before that we'*
>
> *Change 'Not only we' to 'Not only do we' and 'but also hear' to 'but also to hear'*
>
> *Change 'had' to 'has' and 'loving more my talent' to 'loving my talent more'*
>
> *Your last paragraph is all one sentence so you may wish to break it down to at least two, if not three.*
>
> *You have a very creative mind and an interesting perspective on life. I have a lot of respect for you and the other international students coming to another country to study in a language that is not your first at such a young age.*

Other students did not follow the "feedback sandwich" method as explicitly, but still felt more encouraged to post constructive comments and point out ways in which their classmates' work could be improved, as seen in the following comment:

> *I think in terms of cutting down on your words perhaps the detail in the first two paragraphs aren't necessary and they could be added in your about me page and on this page maybe go directly into the multiplatform bit.*

As was also observed by Baker (2016), students who received training on how to deliver feedback to their peers also felt confident enough to suggest meaningful changes to their work, rather than keeping to surface-level comments such as issues of grammar and spelling (Faigley & Witte, 1981). This can be shown in the following comments, in which students focus on deeper issues in their classmates' writing and suggest substantial changes.

> *This is nicely laid out Ellie, possibly include in more detail about the LOVE app, and how it made you feel or affected you.*

Honestly as a blog post I love it like it has a really nice and relatable message and the image is so cute but we were asked to write about multiplatform journalism so I think if you just re-check what Danilo wrote for us to do on this particular post.

Evaluating the action research project

The group's reaction to the implementation of peer feedback in class was overwhelmingly positive. At the end of week five, students were asked to leave their anonymous feedback on the unit in post-it notes. Nine out of 16 respondents specifically mention peer feedback as one of the reasons they were happy with the unit, while four other respondents left positive comments about the seminar tasks in general. Here are some examples of feedback comments left by students in post-it notes:

This unit actually helps me improve my writing and accept criticism.

I feel I have progressed leaps and bounds, especially with my online writing.

I am honestly very happy with this course. The idea of forums and feedback is very useful.

I think that having feedback from each other helps with improvements on your work. It also gives a different perspective on how and what you write.

I really enjoy the amount of feedback we get in this unit.

The seminars help with the assessments a lot.

I like how we get a chance to receive feedback the same day!

As part of their assessment for the unit, students were also required to keep a reflective blog in which they wrote about their learning journey during the unit. Peer feedback was mentioned by several of them in their posts, in which they went into a bit more detail about why they considered it a valuable experience.

Several students wrote about the importance of constructive peer feedback and the positive effect it had on their writing, as seen in the following examples:

I believe [writing] it's something you learn through practice, not research. And with practice, you can only develop yourself through criticism and feedback.

Having this type of feedback from my peers lets me see different angles of my work.

After reflecting on the more constructive comments, I feel as though they have really helped me to develop as a writer.

I have been continuously improving upon my posts with help from the feedback I have received.

These comments echo the findings of previous researchers who observed that a majority of their students perceived the value of peer feedback as something that helps them reflect critically about their work (Nicol, Thomson & Breslin, 2014; Ion, Barrera-Corominas & Tomàs-Folch, 2016).

International students whose first language is not English found it particularly helpful to receive feedback on their grammar and spelling from native English speakers. However, a number of them found it difficult to leave constructive comments on the work of their peers. Several students whose first language was English also argued that they were not confident enough in their language skills to make suggestions for improvements in their classmates' posts.

> *(…) if I can't correct my own mistakes, I'm not capable of correcting other people's mistakes.*
>
> *Even though I am still a little shy with my comments I am grateful my classmates are not.*
>
> *A number of students wrote about their initial concern with the idea of receiving potentially negative comments about their writing. Those who mentioned this concern, however, claimed that the process of peer feedback made them realise the importance of giving and receiving constructive criticism.*
>
> *As much as comments such as 'this is great keep it up' are brilliant for my ego, they're unfortunately not as helpful as comments that make me red in the face and think 'HOW DARE THEY NOT LIKE MY PARAGRAPH STRUCTURE.'*
>
> *Instead of feeling offended I was prepared for critical analysis, which shows I have already adapted to how to be analytical of my writing.*
>
> *Although feedback can be hard to take, sometimes you've just got to suck it up and use the constructive criticism to your own advantage, making your work even more fabulous than before!*

To one of the students, even the positive feedback comments with no constructive suggestions added value to the peer feedback process, by serving as a self-confidence boost.

> *In the future, I will now be more confident when producing a blog post because of this encouraging feedback.*

Another common theme mentioned by several students was that the act of reading and commenting on their classmates' work had helped them get to know each other better and come together as a group.

Even though this was not among the original goals of this action research project, it is a very positive finding, which suggests that the SOL forum could be further used to organise students in a community of practice in which they could share information about writing and evolve together as a group of learners (Wenger, 1998).

This expanded view of the peer feedback experiment also seems to be well-aligned with social constructivism and the idea that, by organising themselves as a learning community with a common purpose and welcoming their classmates' comments, students could learn not only from their lecturer but also from each other (Clark, 2006).

In conclusion, I found that the experiment with peer feedback was very positive after the two action research cycles, and would certainly apply it again in similar writing-heavy units. Looking outside the realm of journalism, this same model could also be applied in other fields where students are required to exercise and improve their writing skills.

Some suggestions for improvement would be to have the session on how to write effective feedback right at the beginning of the unit, which could help them write constructive feedback to each other from day one.

As observed by Grez, Valcke & Roozen (2012), the quality of peer feedback increased significantly after they received instructions on how to give constructive feedback.

It would also be worthwhile to encourage students who are not confident in their writing so that they engage with the peer feedback instead of just receiving feedback without leaving comments on their classmates' writing. One way of doing that would be to suggest that they could write comments focusing on the content of their classmates' posts, rather than their grammar or spelling.

It would also be useful to observe how they evolve as a community of learners after the end of the unit: since the results of the peer feedback experiment were considered very positive by the overwhelming majority of them, it could be valuable if their other writing units also implemented peer-feedback so they could continue to comment on each other's work and improve together as a group throughout the rest of the course.

Acknowledgements

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With(out) a little help from my friends: implementing peer review within a level 4 music unit

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Abstract

This action research project investigated the implementation of peer review activities within a unit focused on financial planning for the music industry. It involved a Level 4 (L4) group studying BA (Hons) Music Management at Southampton Solent University (SSU). Most students involved in the project spoke positively about the peer review experience, suggesting specific ways in which it improved their understanding of assessment criteria.

But two key student concerns were revealed; a lack of mutual trust within the group, and a fear of critiquing classmates' work face-to-face. Quantitative and qualitative data were used to inform the research outcomes, suggesting that past papers are an ideal starting point for the introduction of peer review. In addition, full participation in the peer review process resulted in a small overall increase in grade averages.

Keywords: music education; peer review; action research; academic writing; assessment criteria

Context

The students involved in this action research project come from a wide range of international and educational backgrounds. Learning styles are diverse within the group, yet a common issue raised in L4 tutor meetings referred to a lack of confidence in academic writing ability. These comments led to the idea for this project, as the course had not previously incorporated any specific study skills sessions, prioritising instead unit-specific seminars and lectures.

Course assessments are based on real-world music industry scenarios, with submissions expected to meet rigorous academic standards of research, analysis and referencing. Assessment results throughout L4 had painted a mixed picture, with lecturers similarly concerned by the level of academic writing being submitted. Tutor feedback during this period made regular reference to improving research and citation, leading to concerns that students were not demonstrating a full understanding of the assignment criteria.

The key aim of the project was therefore to improve understanding of these criteria and thus enhance academic writing. Implementation of peer review was proposed as a potential solution to this challenge.

This strategy was inspired by the work of Ferenc (2015), who achieved success with a music group by encouraging peer review as a teaching and learning activity, with students editing each other's formative assessments.

Peer review is defined by Nicol, Thomson and Breslin (2014) as the process of students evaluating, and making judgements about, the work of their colleagues. Race (2005) posits that peer review activities can enhance understanding of summative assignments and thus encourage deep learning - two potential benefits that aligned well with the project's research aims. Race et al (2005) suggest that students adopting the role of assessors also involves analytical judgement of criteria, a more rigorous process than background reading or watching a lecture.

The National Union of Students (cited in Higher Education Academy, 2014) is also supportive of peer review, suggesting that students should not be reliant solely on tutor feedback. The Union states that skills including critical understanding, subject knowledge and self-reflection are developed through peer review, all of which improve employability.

The desired outcome of the project was therefore that peer review would encourage what McConlogue (2015) describes as "assessment judgements", with students improving their knowledge by comparing, discussing and analysing others' responses to the assignment criteria.

Colleague and student consultation

Following a course leader discussion regarding best practice, it was suggested that an appropriate form of peer review would be for students to provide feedback on the previous cohort's past papers. Launching the process with past papers is also advised by Race et al (2005) and McConlogue (2015), who suggest that implementation should be progressed gradually, until students are comfortable with the process.

During subsequent interviews with two L4 student course representatives, it was agreed that the project aims were appropriate. The students suggested that more training on academic writing would be valuable during the early stages of the first year. They also explained that not all assessment criteria and academic expectations may be fully understood by the wider group, sometimes due to misperceptions around lecturers' expectations for an assignment.

Race et al (2005) also researched this theme, finding that students are often confused by assignment criteria due to a lack of familiarity with assessment processes. The students therefore suggested that it may be better to embed study skills within taught units, rather than lecturers relying on complementary writing sessions facilitated by the university librarians.

The potential benefits of the peer review process were discussed, with students suggesting that creating feedback themselves would enhance their current skill set:

> *You'd gain analytical skills, because if you're telling people…where they could do better, then you're learning yourself.*

Although generally positive about the concept, the students worried about who would provide feedback, with concerns about working with less engaged students:

> *If I'm put with someone who doesn't do anything, I'm not trusting them with my work. And there's no way I want to tell them what I think [of their work].*

Methodology

Action research is defined by McNiff (2014) as a participative and collaborative process of change, used to generate new knowledge and thus improve one's practice. Kemmis and McTaggart (cited in Koshy 2010) note that an action research cycle can incorporate planning, acting and observing, allowing the researcher to then evaluate, reflect and revise their work.

Action research was a suitable process to assess the implementation of peer review in to a creative unit, due to its participatory nature and suitability for music practitioners (Cain, 2012). Heron and Reason (cited in Cain, op. cit.) also suggest that the process offers an appropriate research model for music researchers, given its approach of understanding through doing.

The project employed mixed methods to gather data. Qualitative methods included an anonymous student questionnaire, action learning sets with colleagues, a student-led focus group, and interviews with both the course leader and student representatives. These discussions were thematically analysed, using axial coding techniques to connect both key themes and sub-categories (Liamputtong, 2011).

Quantitative data were gained from analysing student grades, both before and after the peer review session. Several aspects of these data were analysed, including; progression from previous assignments, the impact of attendance, and comparison to the previous cohort.

A limitation of the project was the small sample size. Of 20 students enrolled on the course, only 12 attended the peer review session. Despite this, the process has provided valuable data for course development and several ideas for future research.

Preferably, the process should be repeated with a larger music cohort, potentially within a separate course or university. More action research would be welcome for music units, following findings that several music teachers reported profound effects on their practice after engaging in the process (Cain, 2008). However, Cain also cautions that practitioners should focus on the existing literature and concentrate on data analysis to generate trustworthy results.

Project structure

An interactive seminar was designed to help the group develop a deeper understanding of the forthcoming assignment brief.

The peer review seminar included several interactive exercises:

1. Academic writing questionnaire.
2. Discussion of forthcoming assignment brief.
3. Post-it note exercise on the hallmarks of good feedback.
4. Group exercise on what would constitute a good response to the brief, focusing on the specific task, criteria and grading rubric.
5. Discussion of academic writing, using advice from succeed@solent.
6. Analysis and discussion of two past papers.

The session began with an anonymous questionnaire in which students were asked to rate their current academic writing ability, resulting in an average score of 7. The wide range of answers provided were encouraging, revealing candid self-awareness on current strengths or points for improvement:

> *I've been writing academically for a long time now and feel I know what I'm doing.*
>
> *I'm pretty confident when writing academically…even though sometimes I might deviate from the subject.*
>
> *I am an 'emotional' writer and use my own opinion or bias a lot.*

Students were then asked how they approached assignment briefs. Here too, the answers were mostly reassuring:

> *I study the brief very closely and try to pinpoint the main elements.*
>
> *I usually read the brief 2-3 times to be sure and not miss anything.*
>
> *Plan the assignment, in regards to the brief. Find the appropriate material to support the argument I will make.*

Answers relating to the potential challenges of peer review included concerns about providing feedback for classmates and a fear of "being judged" when receiving it. Others were worried about who would be providing the feedback, with one student suggesting that their reviewer could simply be "wrong".

Another interactive task asked students to identify the key elements of good feedback, prior to creating it themselves. One key suggestion from the group was that feedback should ideally be constructive, with an appropriate amount of feed-forward to encourage improvement for future assignments.

The following exercise was a group discussion on the aspects that would constitute a high-quality submission for the forthcoming assignment. Points raised included surface-level necessities such as a clear structure, good presentation and precise grammar. But the group also delved deeper, suggesting that a good essay would include analysis of "reliable sources", resulting in an unbiased and objective "evidenced investigation".

The group's feedback on past paper one (originally graded by tutors as C2, 55%) included identification of surface-level issues such as poor structure and grammatical errors. Students also commented on the lack of research and poor writing style, deemed to be descriptive rather than analytical. The group was surprised when the original grade was revealed, with most suggesting that it should have been lower.

Student feedback on past paper two aligned more closely with the original tutor comments and grade (B1, 68%). The writer was praised for accurately meeting the brief, but criticised for overlong sentences and paragraphs, with one participant noting that they recognised this particular trait in their own writing:

> *I didn't realise how much people hated long sentences…[my] paragraphs are waaay too long!*

Focus group discussion

A focus group was facilitated immediately after the seminar, in order to maintain momentum. Seven L4 students were involved, with the session moderated by two Level 5 (L5) student representatives. Employing the L5 students as meeting chairs offered them an excellent opportunity to develop both their administrative and public speaking skills. Advance training was provided for these students, following guidance from Liamputtong (2011) and 'Transforming the Experience of Students through Assessment' (TESTA, 2015).

A key finding was that a focus group chaired by students from a different year group was particularly effective. Although the researcher remained in the room (albeit not seated at the discussion table), conversation flowed more freely than standard student-staff meetings. Feedback in this informal environment was more open, and therefore ultimately more useful in providing valuable data.

Overall, students enjoyed creating feedback and requested more peer review sessions. Several participants noted that it would be useful when linked to specific assignments, or included once per semester. One participant remarked on the benefit of seeing how a fellow student had approached the brief:

> *I can take that in to my own work and do it a lot better. That's the way it's helped me…I like to see how other people think about it… so it takes me straight away from bad habits…*

The importance of precise and accurate submissions was also covered, with a discussion on the importance of peer review for checking adherence to the assignment brief:

> *I did so badly in my A-Levels because I didn't read the question. But if you get someone else to look at it, they can say "actually, this hasn't answered the question". So, I think that's really useful.*

Another discussion topic was the prospect of face-to-face peer review, widely regarded as a potentially unpleasant experience. One student worried about the "soul destroying" process of reviewing a classmate's work in person. A related finding was that, despite an evident reluctance for 'official' face-to-face peer review, it clearly happens below the radar amongst self-selecting groups. It takes place informally between classmates, but also with other year groups and family members. This point raises the potentially awkward issue of informal peer review being interpreted as collusion. However, the type of proofreading and discussion practices raised in the focus group would be classed as acceptable by many institutions, with the University of Cambridge guidelines stating:

> …it is recognised that in some instances it is appropriate for some students to seek the help of a third party for proofreading. Such third parties can be professional proof-readers, fellow students, friends or family members.

In relation to these informal self-selecting groups, the discussion also raised the importance of mutual trust:

> *I think there's a difference between confiding in a friend and getting somebody's random piece in the class… if you've got somebody that you trust and that will treat you with respect, then [it] might be for the best that they read your stuff.*
>
> *There [are] obviously people within class that all of us would trust more than other people.*

A negative point of this self-selecting process is that not all students will receive this informal peer support, potentially leading to a further disparity of academic achievement within the group. Another student explained why seeking informal feedback from friends was favoured over the more formal guidance and support offered by the university. They believed that talking to a fellow student would result in a more useful outcome than the objective advice offered by the institution:

> *I'd rather talk to other people on the course really …I think with the Uni, it's helpful, but it's… 'you need to do this, need to do that'. Whereas [a fellow student] could [say] 'maybe you could talk about this?'*

The focus group discussion also revealed that the current assignment briefs are not being read in full by all students prior to submission. It was similarly apparent that the generic SSU assessment

rubrics (as currently used for the researcher's assignment briefs) are not always consulted, suggesting that lecturers may benefit from creating bespoke rubrics for each assignment:

> *It seems kind of useless…because it's all the same.*
>
> *Yeah, it doesn't actually say the exact points you need to make…*

Therefore, peer review sessions such as these could play an important part in ensuring that students fully engage with assessment criteria. It is also possible that additional video briefings or lecture capture files would be useful in providing clarification of assignment criteria.

By presenting this content for all on the virtual learning environment, it would be available to those who had missed assignment-related lectures. Success in adopting a similar approach was described by Hill and Bolton (2017), whose study discovered that students appreciated video assignment briefs in addition to the written versions.

A final unexpected outcome was a useful suggestion of an annual review in the form of a one-to-one meeting with lecturers to clarify feedback and offer further guidance:

> *I think there could be an end of year review as well…maybe have an hour with your tutor. A bit more in detail on what they've given you notes about…They go through all the assignments and discuss what you did.*

Results and discussion

Having calculated cohort averages for previous assignments, the author analysed the impact of the process on grades. It transpired that the peer review session was not a 'silver bullet' resulting in higher grades across the board, but did yield notable benefits for several students.

Grades for the assignment in question (Assignment two, submitted in May 2017) were first compared to grades for the previous task (Assignment one, submitted in January 2017). Although both assignments adopt an essay format and are broadly comparable in length, the topics are dissimilar.

As such, comparing grades between the two is a crude and imperfect measurement, but nevertheless a helpful tool in monitoring student progress for the purposes of this action research project. Only those students who submitted both assignments to the original deadline were included in the research, thus excluding referrals (subject to a slightly different assignment brief).

For the previous cohort of L4 students, the Assignment one grade average was 64.14%, declining to 61.21% for Assignment two. But the current cohort's average for both assignments was identical at 63.29%. Thus, the grade average did not decline as it had in the previous year, with the current group also achieving a slightly higher average.

But if the statistics for those attending the peer review seminar are considered separately, the Assignment two grade average was even higher, at 64.8% (a slight increase from 64.5% in Assignment one). For those who did not attend the peer review session, the grade average across the two assignments decreased slightly from 60.4% to 59.6%.

One unexpected outcome was that, despite the slight increase in the grade average for those attending, five of the twelve students in attendance saw their grade decline from the previous assignment.

Conversely, one notable success story involved a student who adopted much of the session feedback and increased four grade points from the previous assignment, progressing from C2 (55%) to B1 (68%). Clearly, many other external factors may have influenced these grades. But the lack of a significant rise in the grade average suggests that one peer review session in isolation is insufficient.

The final notable finding was that those who participated in the focus group immediately after the session showed a higher overall increase in the grade average across the two assignments, from 67.2% to 68.42% (three of these students increasing their grade from Assignment one, three decreasing and one static).

Volunteering for the focus group may reflect the students' wider efforts to engage fully with the course, thus subsequently improving their grades. But the increase also suggests that the focus group session may have embedded a deeper understanding of the assignment for some students, given the detailed conversation that took place. Further research could therefore study whether focus groups such as these could aid academic writing as part of scheduled sessions.

The lack of significant group progress could also relate to the assignment brief itself. Findings from this project suggest that it could be further clarified, as a common tutor feedback point was that many students had not included enough content in one area of the assignment (a specific amount of content was not referenced in the guidance notes).

Conclusion and recommendations

The key findings of this action research project are that:

- Past papers are an ideal starting point for the introduction of peer review.
- Participation in the focus group resulted in a small overall increase in grade averages across two assignments.
- The peer review process has the potential to improve students' academic writing, particularly for those who engage fully. However, one session in isolation is likely to be insufficient.
- Face-to-face peer review may be difficult to implement, due to student fears on how feedback may be interpreted by colleagues.

- Informal peer review occurs between both fellow students and family members
- Study skills tutorials are appreciated by students and, where possible, academics should consider embedding such sessions within timetabled units.
- Focus groups chaired by students from a separate year group can be highly effective in garnering open and honest responses from participants.
- Observing the process can afford academics the opportunity for insightful reflection on unit structure and student learning experience.

The project also achieved its key aim of improving understanding of assessment criteria and thus enhancing academic writing, as evidenced by the improved grades and student feedback. As a result, more peer review exercises will be used, in addition to new study skills seminars on a core unit.

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Assessment by PechaKucha 20x20

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Abstract

This case study discusses the use of Pecha Kucha 20x20, a presentation format consisting of 20 PowerPoint slides set to forward automatically after 20 seconds, for student assessment. Level 6 Business students (n=36) were required to present a research proposal in the Pecha Kucha format and received formative tutor and peer feedback, before submitting a final version for summative assessment. The Pecha Kucha format was used in order to introduce variety and authenticity to assessment in this module, to counter practical problems associated with using presentations for assessment, and to facilitate opportunities for formal formative feedback. Module evaluation questionnaires and informal student feedback suggest that students particularly valued the structured nature of the format, the amount of formative feedback received and the opportunity to see peers' work. Due to the small scale of this study, more research is needed to explore further the use of the Pecha Kucha format for assessment tasks.

Keywords: formative feedback; presentations; Pecha Kucha; sustainable feedback

Introduction

This small-scale case study discusses the use of Pecha Kucha 20x20 as an innovative variation of the common assessment format of student presentations. A Pecha Kucha consists of a set of 20 PowerPoint slides, set on a timer to automatically change every 20 seconds, which allows for about 40-50 spoken words per slide, depending on speaking rate. The format was originally devised in 2003 by Astrid Klein and Mark Dytham of Klein Dytham architecture in Tokyo, Japan, for presentations in a non-academic context. Pecha Kucha nights, informal gatherings where people share their ideas, work and experiences in this format, are now held in over 900 cities around the world (Klein Dytham Architecture n.d.). More recently, the format has also been adopted for presentations at academic conferences, which inspired the adoption of the Pecha Kucha format for student assessment at the University of Winchester.

Context

The Pecha Kucha assessment format was trialled at the Winchester Business School, in a third-year management research module with 36 students taught in two groups, in the academic year 2016/17. The module is the compulsory replacement for the dissertation module for direct entrants to Year 3, predominantly international or BTEC students, and is offered as an optional alternative to all Year 3 students on the Business Management, Event Management and Marketing programmes.

The 12-week module offers weekly two-hour workshop-style sessions, with a mix of short lectures, seminar-style tasks and small group tutorials. It attracts a higher than average proportion of international students and students with learning agreements, as well as students with lower levels of confidence, who prefer the regular contact time and additional guidance offered in this module to the predominantly independent work required for the dissertation.

The assignment for module assessment is a portfolio consisting of a critical review of academic papers (20%), a research proposal (20%) and a research paper (60%). Previously all three parts were submitted as written work.

Problem

The new assessment format was trialled in order to address several issues: firstly, to introduce more authenticity and variety to the assessment tasks in the portfolio; secondly, to counter some practical problems associated with assessment by presentation; and thirdly, to facilitate opportunities for formal formative feedback.

Good assessment practice aims to include a range of assessment formats within a module or programme to take account of different strengths and learning styles of students in a diverse student body (Nicol & MacFarlane-Dick 2006; Irwin & Hepplestone 2012). Final year modules are predominantly assessed on the basis of individual written work, particularly where the grade is based on a single piece of work, to enhance accuracy and consistency of grading (MacLellan 2001; 2004). Nevertheless, where module assessment consists of more than one task, an opportunity for variety exists even in a final year module.

Student presentations are used for assessment on Business Management programmes because they are considered a form of authentic assessment, that is, relevant beyond the educational context, particularly for future employment (McDowell et al 2011; Ritchie 2016). However, they can be very time-consuming if individual students present, especially in larger cohorts. Group presentations on the other hand can be affected by group-related difficulties such as social loafing (Takeda & Homberg 2014) and students' resistance to group work resulting in an actual group grade, rather than a pass/fail grade, as is commonly the case in the first year of study. There is evidence that higher-achieving students receive lower marks for group work compared to their usual individual grades, while lower-achieving students achieve higher grades (Almond 2009; Lejk, Wyvill & Farrow 1999). The development of an effective format for individual student presentations was therefore an issue to be addressed.

The importance of feedback for student learning has been long established in the literature (Black & William 1998; Nicol & Macfarlane-Dick 2006; Hattie 2009). However, feedback is a complex construct, and it can be difficult to define and establish its effectiveness (Hounsell 2008; Nicol 2010; Tuck 2012). This is particularly the case for formative feedback, which may be given informally, irregularly, even randomly. There is some evidence that students consider feedback as unhelpful, as it is too general, too impersonal, unrelated to assessment criteria or too negative

(MacLellan 2001; Higgins, Hartley & Skelton 2002; Weaver 2006). Similarly, although peer feedback has many positive aspects, students have expressed anxiety about both its emotional dynamics and its usefulness (Cartney 2010). The facilitation of effective formal formative feedback was another issue addressed by this project.

Innovation

Students were required to deliver the research proposal element of their assessment portfolio in the Pecha Kucha format. There were two stages to this task: the first was formative according to Jessop and Maleckar's definition as "compulsory tasks which elicit feedback, without allocating marks" (2014, p.5) and consisted of a Pecha Kucha presentation in class. This was followed by the second, summative stage, where students submitted a revised set of Pecha Kucha slides online at the end of the semester.

As students had no prior experience of Pecha Kucha presentations, care was taken to familiarise them with the format, in order to reduce the confusion and emotional discomfort that can be associated with innovative assessment forms (MacLellan 2004; Bevitt 2015). The tutor introduced and demonstrated the Pecha Kucha format in class in Week 1. Students were then asked to view a range of examples on the Pecha Kucha website (Klein Dytham Architecture, n.d.), to identify effective examples, and to post a link on the module's Virtual Learning Environment (VLE) discussion board as an independent learning task. In Week three, students were provided with a Pecha Kucha planning sheet, containing 20 fields with space for noting the subject, content and image for each slide, and were invited to consider and discuss an outline of their presentations in pairs or groups of three. In Week six, students were again asked to discuss the current version of their Pecha Kucha planning sheet, this time with reference to the marking scheme, offering a further opportunity for peer support and feedback.

Students were required to present their Pecha Kucha in class during Weeks eight to eleven. They were able to select and book their presentation slot online and showed a strong preference for slots in the second and third week. In these four weeks, four to five Pecha Kuchas were presented in each class, usually in two slots at the beginning and end of the session. As was to be expected, the standard of the presentations was somewhat variable, particularly in the first week, but improved week on week, with some very polished presentations in Week four.

In order to facilitate peer feedback, students were provided with a simple form with a START-KEEP-STOP template before each presentation to allow for taking of notes on the form; it was then fully completed by the tutor and students after the presentation. Students were encouraged to refer to the marking scheme in the module handbook and were also given the option to consult with a neighbour and complete a joint feedback sheet. Initially, all feedback forms were collected by the tutor after a few minutes and handed to the presenting student. However, a brief review of the sheets indicated that much of the feedback was superficial and of limited usefulness, for example consisting of a single sentence such as "nice design" or critiquing a particular image on a

slide. In a few cases the feedback was even potentially counterproductive, for example mistakenly suggesting that too much literature had been referenced, when the amount was entirely appropriate. Students clearly required more preparation and support for giving useful peer feedback (Cartney 2010). On reflection, this was hardly surprising, considering that many academics find it challenging to give effective feedback (Bailey & Garner 2010; Tuck 2012).

In order to address this issue, students were still required to complete the written feedback form after each presentation but then asked to also give one of their comments orally, in class. Initially, the tutor gave some oral feedback first, thereby modelling feedback for students (Nicol & Macfarlane-Dick 2006), before students were invited to add their own comments. The following week, students were asked to each give a comment first, before the tutor added some feedback. This approach had the positive side effect of making students more attentive during presentations. The oral feedback in class allowed the tutor to clarify and occasionally counter unhelpful peer feedback, raise additional points and respond to any queries immediately. Subsequently, students gave considerably more feedback, and the quality of the comments improved substantially. Although this combined approach (Ritchie 2016) was more time-consuming, students indicated that they found it particularly helpful.

Following the presentations, students were able to revise their Pecha Kucha, taking into account the feedback received from peers and the tutor for their own Pecha Kucha, and also that given to other students for their presentations. At the end of Week 12, students electronically submitted the final version of the Pecha Kucha slides, including written text in the notes section of the slides, for summative assessment.

In order to evaluate the use of the Pecha Kucha format for assessment, students' views were sought both informally in class and formally through anonymous mid-semester and end-of-module questionnaires. For mid-semester evaluation, students completed a written START-KEEP-STOP format questionnaire in class in the first semester and an online questionnaire using the same format in the second. 27 students (75%) responded in Semester one and ten (28%) in Semester two. At the end of each semester, standard module evaluation questionnaires were e-mailed to students, which 8 students (22%) completed in Semester one and seven students (19%) in Semester two. The comparatively low response rates of the electronic questionnaires, although not entirely unusual (Stowell, Addison & Smith 2012), nevertheless reduces the representativeness of the written comments; the discussion below therefore also reflects the tutor's recollection of students' informal comments in class.

Strengths

Although initially unfamiliar with the Pecha Kucha format, most students quickly embraced it. Mid-module feedback indicated that they appreciated its structured nature, "It helped me to be more concise when producing the proposal" one student observed, which nevertheless permitted creative expression. It allowed all relevant aspects of the research proposal to be addressed but

stopped students from overrunning allocated time slots. Consequently, the individuality and variety of the presentations, as well as their brevity, prevented watching numerous presentations from becoming too boring. A student commented: “The fun concept of presenting with a Pecha Kucha…was more engaging than listening to a long presentation.”

In the written mid-module feedback, five students positively highlighted the Pecha Kucha format, while two students would have preferred to present to a smaller group rather than the whole class, and one student would have preferred watching just a few rather than all the presentations. In an informal classroom discussion at the end of the first semester, most students supported the retention of the Pecha Kucha presentation as part of the assessment portfolio for future year groups. In the written module evaluation students particularly highlighted the opportunity to receive formative feedback and to see and learn from other students’ work. One student remarked: “The chance to gain peer and tutor feedback through the formative assignment was very useful for when we were completing the summative assignment. It was also very useful to watch the presentations of others.”

From the perspective of the module tutor, the practical advantages of the Pecha Kucha format included the efficient planning of teaching sessions permitted by the fixed length of each presentation. The strict format made students’ work more comparable; marking of the Pecha Kucha slides was quicker and more interesting than marking research proposals in a standard written format.The main strength of the Pecha Kucha format, however, was that it facilitated a substantial amount of sustainable formative feedback (Carless et al 2011), allowing the tutor to clarify goals and standards by highlighting, and if necessary further explaining, relevant criteria concerning the structure, content and format of the assignment. The peer feedback element enabled students to develop their evaluative capacity with regard to their own work.

Limitations

Some students were initially wary, as they were unfamiliar with the Pecha Kucha format; in particular, one student queried why a new assessment format was introduced in a third year module. Even though no mark was attached to the presentation itself, several students commented after their presentations that a Pecha Kucha felt more stressful than a normal presentation, due to the lack of control over the progression of slides. One student objected to the format’s lack of flexibility and felt that the brevity required limited the depth and sophistication of her work, writing: “Whilst we are encouraged to provide detail on the slides and expand on these areas in the note section the slide is only up for 20 seconds making it difficult for the audience to take everything in. This is something we were criticised for, however it is exceedingly challenging to do both to a high standard.” Three students indicated that they were uncomfortable with having their work discussed in class and asked to be given written feedback only; a few students declined to comment on other students’ work when invited to do so, perhaps due to shyness or possibly displaying some resistance to peer review (Wilson, Ming & Huang 2015).

From the module tutor's perspective, the main limitation of using the Pecha Kucha was reduced differentiation in the standard of students' work compared to other forms of assessment, leading to fewer high and low grades and more mid-range grades. The relative scarcity of low grades arguably resulted from the large amount of formative feedback for this task, which enabled students to develop a comprehensive understanding of its requirements and allowed them to improve their work. The smaller number of higher grades might be linked to the format limiting students' ability to demonstrate the full breadth and depth of their knowledge and understanding, and thereby to distinguish their work. In addition, the creative aspect proved challenging for some students, including some academically able students. Although only 20% of the mark was awarded to the visual presentation of the slides, including the choice of appropriate images, this could have prevented some students from achieving the highest grades, while favouring students with skills and expertise in this area.

Evidence of impact

The underlying aim of the project was to better support students' learning through assessment 'for' as well as 'of' learning (Carless 2007; McDowell et al 2011). In order to achieve this aim, three specific objectives for the use of the Pecha Kucha format for assessment were identified: firstly, to increase variation and authenticity of the assessment format for this module; secondly, to address common practical problems of student presentations; and thirdly, to facilitate effective formative feedback.

The most effective aspect of the two-stage Pecha Kucha format in supporting student learning was the facilitation of substantial amounts of formative feedback from tutor and peers. Goals and standards were clarified by highlighting, and if necessary further explaining, relevant criteria concerning the structure, content and format of the assignment (Jessop & Maleckar 2014). Students benefitted from hearing tutor comments on other students' work as well as their own and the peer feedback element enabled students to develop their evaluative capacity (Boud & Molloy 2012). As such it demonstrated some characteristics of sustainable feedback identified by Carless et al., (2011, p.2), specifically "(1) involving students in dialogues about learning which raise their awareness of quality performance; (2) facilitating feedback processes through which students are stimulated to develop capacities in monitoring and evaluating their own learning".

In order to address limitations and concerns raised in this pilot, it would be preferable to introduce the Pecha Kucha format to students at an earlier stage in their degree course. This would allow students to familiarize themselves with and develop expertise in this assessment format, and would address their concerns regarding unfamiliarity. Also, its use as the sole assessment format in a module should be carefully considered; it may be most appropriate as part of a portfolio, or in combination with more extensive written work, particularly for Year 3 modules. More research is therefore needed to explore the use of the Pecha Kucha format for assessment further.

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Anchoring the experience of highly diverse students on the EMship+ Master's: all aboard!

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Abstract

The prestigious Erasmus Mundus Joint Master's Degrees capitalizes on diversity to achieve academic excellence; this is the case of the EMship+ Master's in Ship Design. The highly varied cultural and academic background of the students however raises a learning and teaching challenge. Firstly, I assessed the diversity of the student cohort with an evidence-based approach to identify the dominant learning styles, and align the teaching to promote student engagement. Secondly, I created a more technology-enhanced learning environment thanks to the innovative use of lecture capture. The research ascertained evidence of the positive impact of the refined teaching style and integration of technology using the quantitative data collected. Here, I outline the strength and limitations of the innovative solutions adopted to alleviate the difficulty of teaching highly disparate groups of students, demonstrating the need to gain knowledge of the students to construct an engaging learning environment.

Keywords: Learning Environment, Learning Styles, Student Engagement, Diversity, Erasmus Mundus.

Introduction

In the context of a more and more diverse higher education, providing a learning environment that is suited to students of varied backgrounds and cultures presents a contemporary challenge. This case study will focus on a highly international Erasmus Mundus programme to demonstrate how knowledge of the students is crucial to satisfy their learning styles, i.e. their preferred and most engaging way of learning, and how this can further be improved using lecture capture in both a traditional and innovative way.

Firstly, I will introduce the EMship+ course, with a strong emphasis on the benefits of diversity and dialogue in higher education. Then, the evidence-based knowledge of the student cohort will be detailed, and the main findings inherent to their learning styles will be the basis for a reflection on my teaching practice that will lead to a refined delivery method. A survey eventually revealed that the students preferred this unit's teaching style over the more traditional one of all the other units. In addition, a two-week trial with lecture capture (recording both full sessions and creating micro-lectures with embedded quizzes), employing an action research methodology, yielded some very positive results with a high student satisfaction that suggests it should become part of the normal course delivery. I will discuss the limitations to the proposed solutions, surrounding the logistical difficulty of such an international course and staff resistance to changed approaches.

Finally, I conclude with recommendations regarding the creation of a more modern and student-focussed learning environment for the EMship+ students.

The EMship+ Master's

Created in 2011, the EMship Master's Course in Ship Design is part of the prestigious Erasmus Mundus Joint Master's Degree (EMJMD) programme that aims to bring together a cohort of highly diverse students, enhance the quality of higher education and promote dialogue and understanding between people and cultures through mobility and academic cooperation. In recognition of its outstanding performance, the course was later granted the Erasmus Mundus + label by the European Commission. The students are given the opportunity to study in at least three countries over the 18-month duration of the course. The first semester is taught at the University of Liege, Belgium; the second at the University of Nantes, France; and the third in either Germany, Poland, Romania, Italy or France. Furthermore, between the second and third semester, students can conduct their research thesis in a partner university worldwide, such as Southampton Solent University; the universities involved in the EMship+ Master's are presented in Figure 1. As of 2018, a new version of the Master's extended over four semesters instead of three has been launched to attract more students. The ambition of the Master's is to build on diversity, with an interdisciplinary approach with exceptional depth and scope thanks to the wide range of international universities involved (Rigo, et al., 2015). As a result, Southampton Solent University contributes in its area of expertise, namely Yacht and Powercraft Design.

Figure 1: EMship+ network (Souppez, 2016)

Recognising and encouraging diversity is the culmination of a long process, labelled the 'genealogy of diversity' by Combs (2002). Originally, the concept of equal opportunity was primarily focussed on eliminating racial discrimination. Today, diversity is being taken further towards the integration of differences, in a process defined as pluralism. Diversity has become a strength that higher education is looking to exploit to its full potential, particularly in the Maritime field, as previously shown by Souppez (2017), and clearly stated here:

> The faculty capitalize on the diversity in the classrooms, which includes traditional students (high school direct to college), active duty and military veterans as well as those who have work experience and are now pursuing an engineering degree. Having a 28-year old sailor with a shipboard experience in the same classroom as a 19 or 20 years old with very little experience and a 34-year old shipyard welder working on her engineering degree brings so much more depth and peer-to-peer learning in the classroom (Michaeli et al. 2015).

This is the approach taken by Erasmus Mundus programmes, promoting student mobility and multicultural learning environments in higher education. It raises one major challenge: how to teach such a diverse cohort of students? Higher education institutions are multicultural, and the United Kingdom has the most diverse higher education system (Huisman, et al., 2007). It is therefore logical to see the Teaching Excellence Framework (TEF) (Business Innovation and Skills Committee, 2016) define its purpose as recognising and respecting diversity. At a more local level, the strategic plan developed by Southampton Solent University (2015) has a strong emphasis on, and commitment to equality and diversity.

Another critical aspect in building the learning environment for the EMship+ students will be creating a dialogue. The growing importance of dialogue in higher education is revealed by its increased presence in the literature (Gunnlaugsen & Moore, 2009). Dialogue is indeed a significant component of education and learning, as argued by Carducci, et al. (2011) and later supported by Stern (2014). Open dialogue has also been shown to promote constructive curriculum development (Hayen & Maelstaf, 2014). Moving away from the old-fashioned perception that the teacher is in a position of power, controlling knowledge with authority (Freire, 1968), dialogic education has respect as a core value, so that the learner's voice is heard, and a feeling of respect is fostered (Gerber, 2015). Henard & Rosevearne (2012) present evidence that cultivating an ongoing dialogue between teachers and learners results in enhanced student engagement and a greater student satisfaction with the curriculum.

To evaluate the diversity of the EMship+ students and establish a beneficial dialogue that will allow me to adopt a relevant and effective teaching style, I performed an evidence-informed analysis of the 2016 and 2017 cohorts. This is primarily driven by the fact that the students have

extremely diverse backgrounds and were completely unknown to me prior to teaching them; the course was developed without knowledge of the students, and may therefore need to be refined based on findings inherent to the students' learning styles.

Teaching for Diversity

I developed an anonymous questionnaire to build a profile of the student cohort, including some indication of the ways in which they preferred to learn. This helped me identify individual and group barriers that I would need to overcome to enhance the learning environment (Hoff et al., 2004). Furthermore, it was an indication of my concern and respect for the students and the ways in which they learned (Ramsden, 2003). My rationale for the questionnaire was linked to Fox's (2006) travelling theory. I wanted to shape the students' learning journey by better understanding where each was coming from (their academic background) and what they saw as their final destination (their intended job or field of activity). The three-part structure of the questionnaire is related to the 3P model (Biggs, 1989), namely presage, process and product, as detailed hereafter.

Part 1 (Sections 1 to 5): Presage – Personal, academic and professional background prior to the course, and motivations to undertake the course

Section one provides a quick overview of the students' origin, age, gender and spoken languages. An important aspect had to be left out of this section: religion. Indeed, while gathering religious statistics is common practice in the United Kingdom, it is forbidden under Belgian law. The second and third sections tackle the academic and professional background of the students. Finally, sections four and five respectively assess why the students decided to move towards naval architecture, and the motivations behind undertaking the course.

Part 2 (Section 6): Process – Identification of learning styles, student engagement and most effective learning activities

Entitled 'How do you learn', the sixth section looks at what makes a lecture engaging and how the students learn. This part comprises a multiple-choice section to allow for a quantitative analysis of the results; the purpose being to investigate the students' attitudes towards the lecture, and categorise their behaviour based on the six student learning styles defined by Reichmann and Grasha (1974), so that teaching practice can be altered to better suit their learning needs.

Part 3 (Sections 7 and 8): Product – What are the intended learning outcomes and student ambitions for the future

Section seven tackles their future job and career goals, so their ambitions can be better supported. Finally, students are given an opportunity to add anything they feel relevant in the eighth section.

The questionnaire was completed by 30 students in 2016 (100 % response rate) and 24 students in 2017 (89% response rate), and revealed that over those two years 16 nationalities (depicted in

Figure 2) and 19 different languages were represented, thus reflecting the diversity of the group. The questionnaire showed that English was a second language in over 90% of the cases.

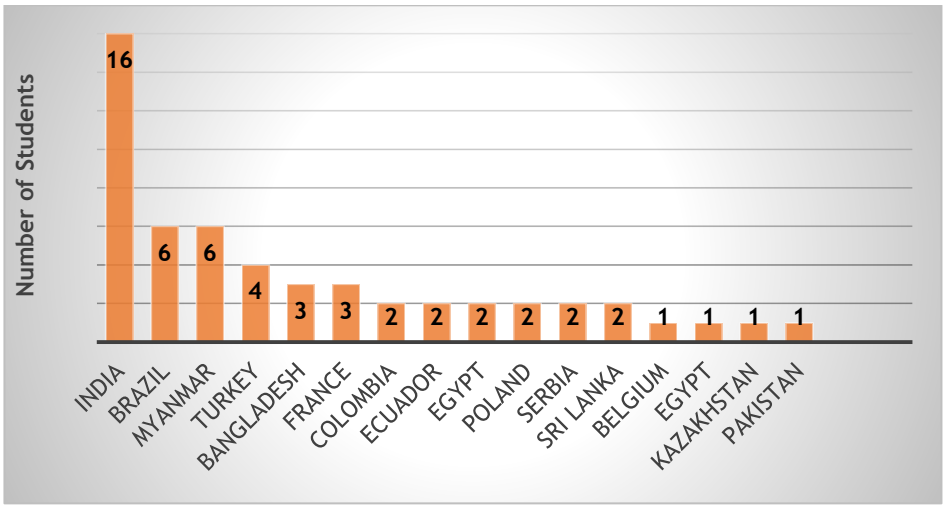

Figure 2: EMship+ nationalities (2016 and 2017)

Another primary objective was for me to establish from which industry the students originated. Indeed, the EMship+ course is intended for students with a background in engineering disciplines other than naval architecture. In fact, only 22% of the students have a naval architecture educational background, while the rest come from an array of diverse industries, as presented in Figure 3.

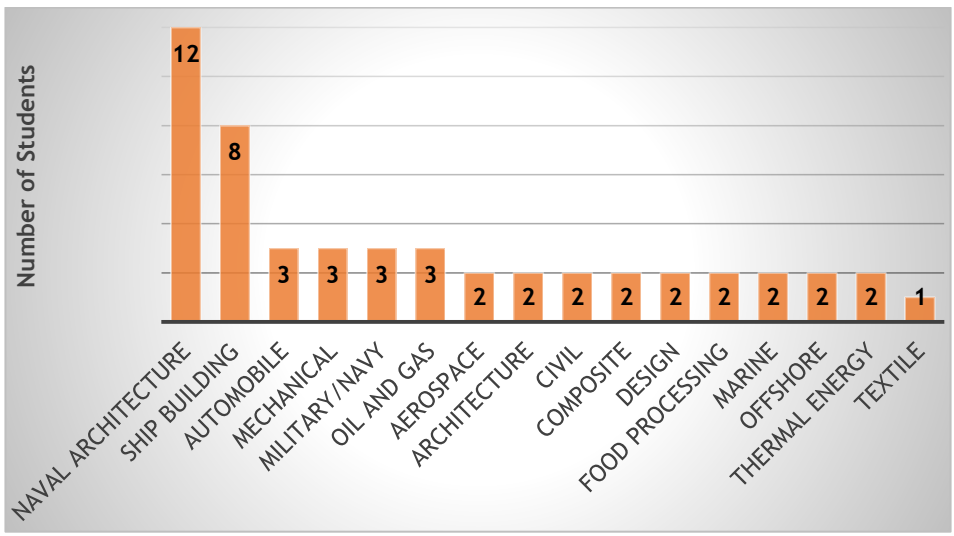

Figure 3: EMship+ backgrounds (2016 and 2017)

In order for me to provide teaching that will be more engaging and allow the students to achieve the intended learning outcomes in a stimulating way, I incorporated questions about their learning styles. Those were inspired by the learning styles defined by Reichmann and Grasha (1974), namely: competitive, collaborative, avoidant, participant, dependent and independent. I opted for this particular inventory as it is considered part of the family of learning styles more targeted at learning approaches and strategies (Coffield et al., 2004), thus fitting well with my ambition for this research. Moreover, previous work undertaken with this theory revealed its suitability for maritime courses (Souppez & Ridley, 2017). The results of the survey completed by the 54 participants over two years yielded some very clear trends, represented in Figure 4, with the students clearly seeing themselves as collaborative and participant.

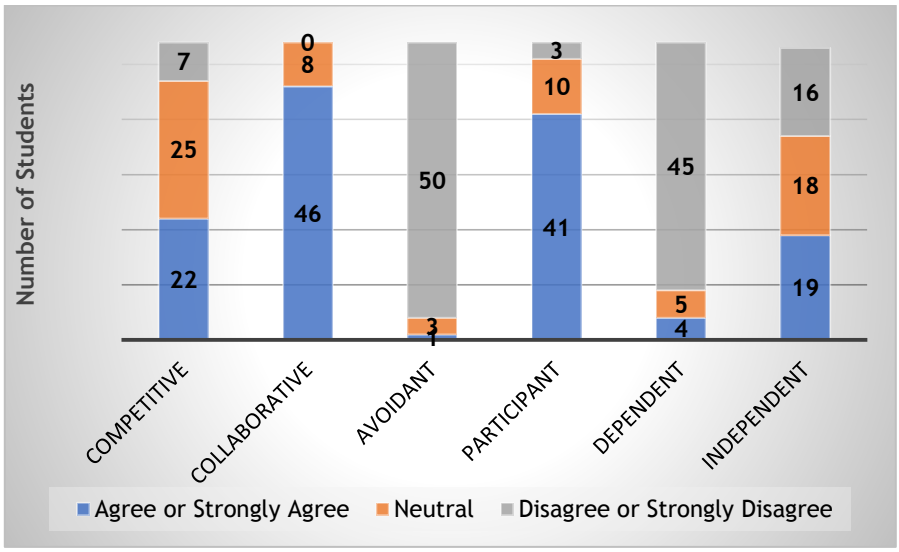

Figure 4: Reichmann and Grasha (1974) learning styles results

Collaborative students learn by sharing ideas; this calls for more group activities and group discussions. This is further revealed in the students' answers to the questions 'what makes a lecture interesting/engaging?' and 'what are the best ways you learn?', where a large proportion mentioned the importance of discussion. The collaborative learning style, also identified and defined by Coates (2007), builds on the social aspects of teaching, with student engagement being motivated by the feeling of being part of a community, thus reinforcing a social constructivist approach (Clark, 1998).

On the other hand, a large majority of the students appear to define themselves as participant, i.e. looking to make the most out of the course. Once again, this is validated by another part of

the questionnaire, where all students either strongly agreed (67%) or agreed (33%) that they want to learn as much as possible from the course. This suggests the students are aiming to achieve deep, as opposed to surface, learning (Marton & Saljo, 1976). As per the collaborative students, participant students are characterised as learning from discussion (Reichmann & Grasha, 1974).

Finally, statistics relative to student engagement with the lectures and course material are presented in Figure 5. While most will listen to the lecture, a lower proportion will take notes and ask questions, and only 56% will make use of the virtual learning environment (VLE). This reveals a lack of engagement both in and out of the classroom, suggesting more appropriate leaning and teaching strategies could be implemented.

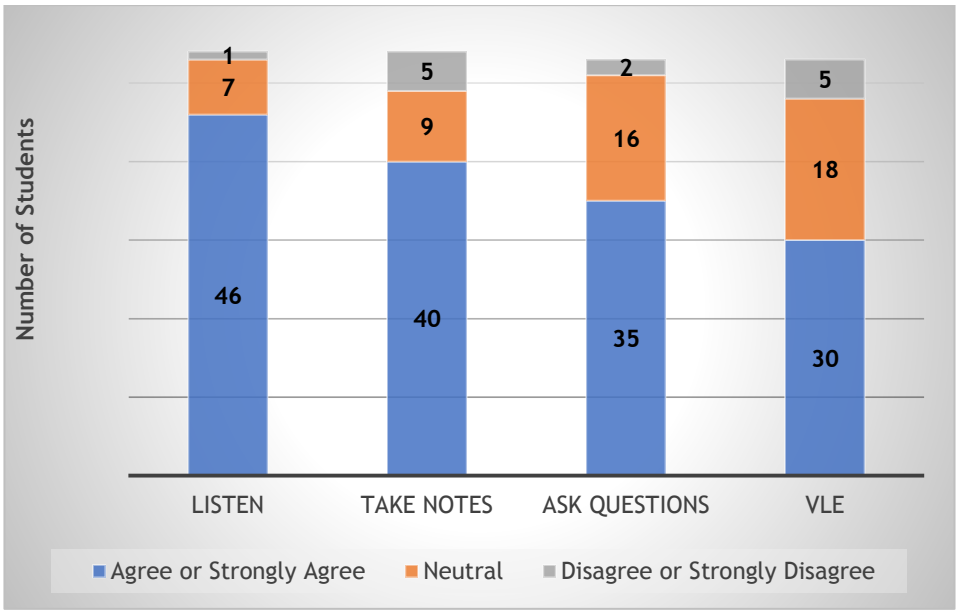

Figure 5: Student engagement (2016 and 2017)

Having established the wide diversity of students, their collaborative and participative learning styles with a high demand for discussions and deep learning, I was in a position to alter and refine my teaching practice to better suit the highly diverse student cohort.

Reflections on teaching

The evidence-informed knowledge of the EMship+ students allowed me to understand the way students learn and align my teaching with it. The questionnaire highlighted the wide cultural and academic origins of the students, and revealed their collaborative and participant learning styles. With highly diverse backgrounds, coming from a range of engineering disciplines, it is therefore no

surprise that students are passionate about learning from each-other, exchanging their points of view via discussions and group activities. Furthermore, despite their varied education, students are now studying the same subjects, hence the call for more details on specific vocabulary to bring everyone to the same level. Finally, being in a practical branch of engineering, the cohort showed a distinctive interest for real case studies and practical worked examples. This supports the outcome of the questionnaire that the cohort is pursuing a deep learning process, and is therefore concerned by the ability to apply the theory learnt to solve real problems.

These highly significant findings allowed me to remodel the programme, which I had previously developed without prior knowledge of the students. Armed with new information, I was able to begin the task of refining learning and teaching approaches to better suit the students on the course; I wanted to transform the pedagogy in line, not only with students' expectations and preferences, but also with my own understanding that varying the activities and lecture format would stimulate a higher level of engagement (Becker & Watt, 1995).

The questionnaire responses had highlighted that the students were keen to experience collaboration and to actively participate in their learning. Three examples of the changes I made in response to this knowledge of the students were:

Figure 6: Original slide

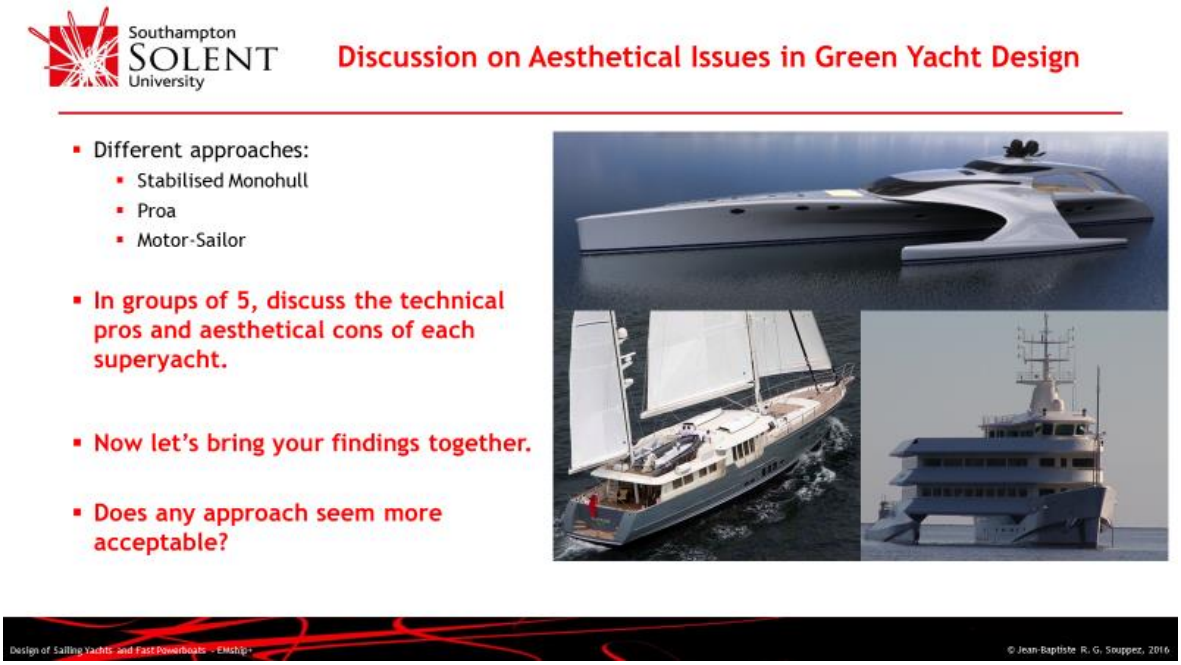

Figure 7: Modified slide to include more group discussion in my delivery of the course

As my research progressed, I also began to make use of lecture capture technology in two forms. I had identified that students did not often take the time to view a complete lecture recording, so I explored the use of micro-lecture captures with embedded quizzes. I inserted quiz questions at key points in the short videos to stimulate students' engagement with the VLE and promote retention.

Using my prior knowledge gained from the questionnaires I was able to reflect on my current teaching practice and begin to build a learning environment that was better suited to my students. In particular, I reflected on the ways in which new technologies might be used to enhance their learning experience.

Evidence of Impact

The impact of my teaching practice and the changes I made to align with the preferred learning activities was qualitatively quantified during the 2016 end of year course survey, where students rate the quality of each module and lecturer based on three criteria: namely the scientific content of the lecture material, the teaching style, and the level of spoken English.

Out of the 25 taught modules delivered by 12 lecturers, the highest satisfaction was obtained by the pedagogy described in this case study, which was the only module to adopt an alternative teaching method.

This is best represented in Figure 8, comparing the survey results for my experimental teaching style based on adapting my teaching to the students, and a more traditional style, i.e. the average results for all other modules, all performed without consideration for the students' learning styles and delivered in a more traditional teaching way (no open discussion, no group activities, limited use of technology).

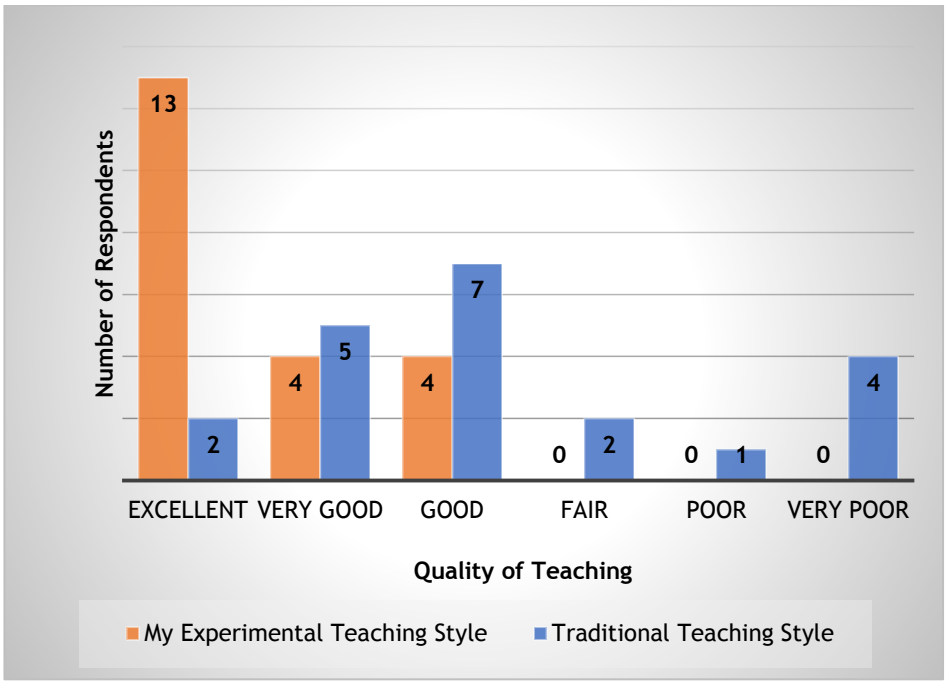

Figure 8: Student feedback on course (2016)

This clearly demonstrates that the students positively perceived the changes I put in place, once better aware of their background and expectations.

Secondly, I gathered data on the use of lecture capture made in 2017, both prior to and after its two weeks trial with the students, so that the original perception could be compared to the final satisfaction.

This represents a cycle of action research methodology, planning and implementing a change in my practice, and then assessing the impact. Students were asked whether the EMship+ course should adopt lecture capture, micro-lecture captures, and provide a more technology-enhanced learning environment.

The initial answers to those three questions are presented in Figure 9.

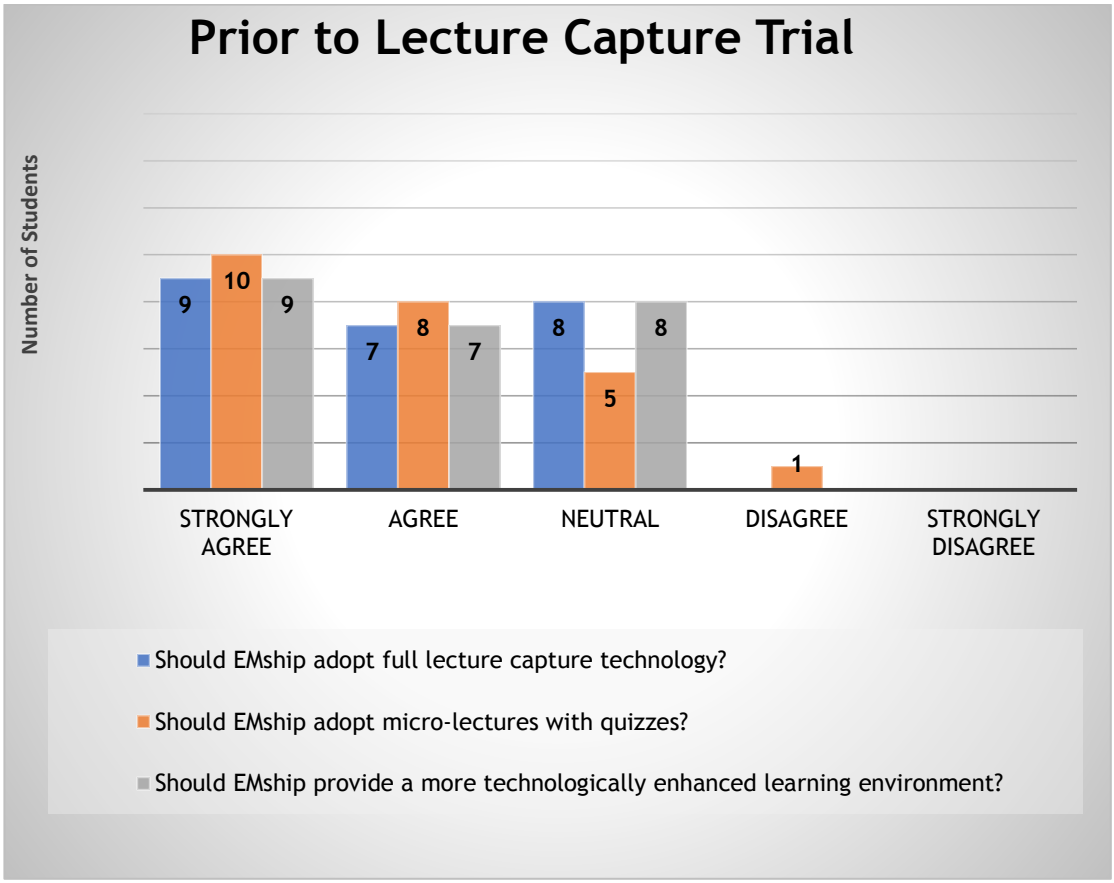

Figure 9: Student opinion prior to Lecture Capture Trial (2017)

At first, the overall perception is generally positive, although a third of the group had reservations. However, when asked the same questions two weeks later, a major shift was noticed, with a majority of the class strongly agreeing with the benefits of lecture capture, and the number of sceptical students reducing to 12%, as depicted in Figure 10.

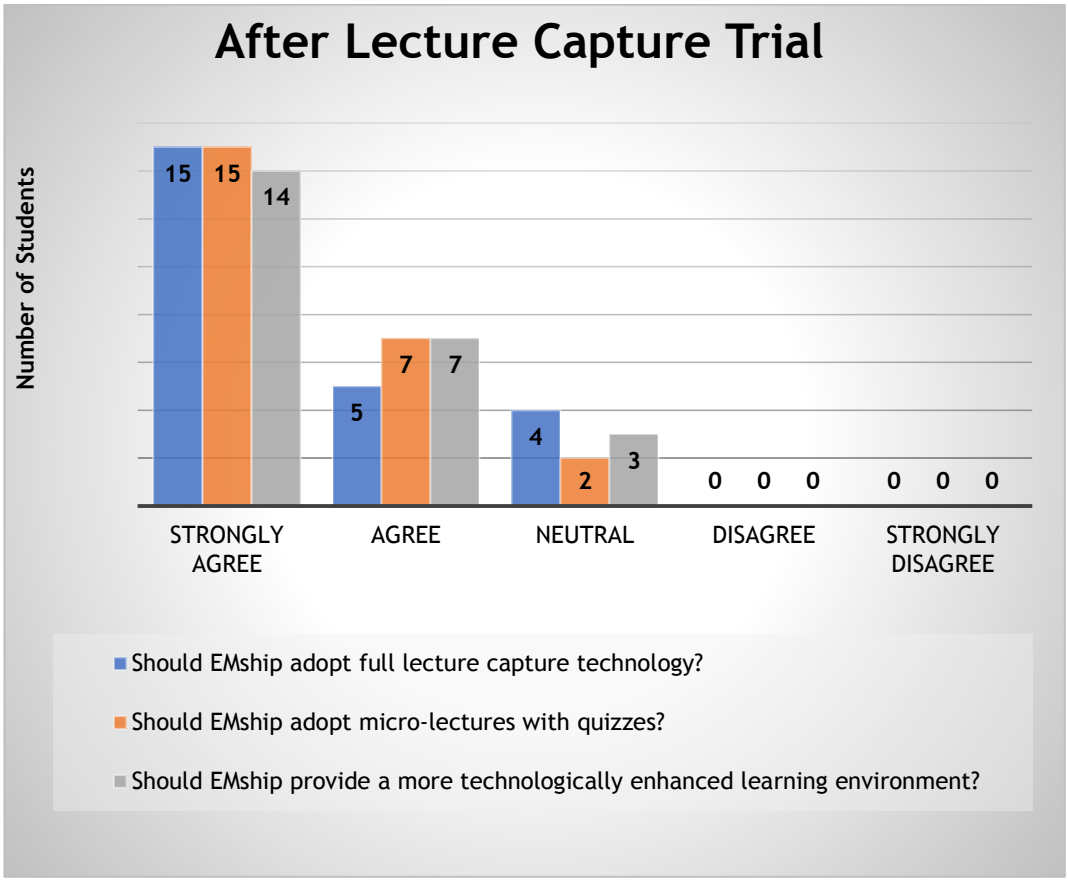

Figure 10: Student feedback on Lecture Capture (2017).

The shift towards a greater satisfaction is a strong indication of the positive impact of the lecture capture technology (in both full and micro-lecture formats), as well as the benefits of the technology-enhanced learning environment I experimented with during the short course.

Another particularly pleasing finding was the greater use of the micro-lectures with embedded quizzes compared to the full lecture captures. Indeed, comparing the viewing patterns for the micro-lectures and full lectures captures, depicted in Figure 11, there is a much stronger use of the micro-lectures made. Furthermore, the viewing pattern between the delivery of my lectures and the exam is particularly encouraging.

The majority of views occurred during the course, the holiday, and the week before the exam. In all cases, a greater use of my micro-lectures was made by the students, thus providing further evidence of the rationale behind my action research experimentation with the innovative use of lecture capture technology.

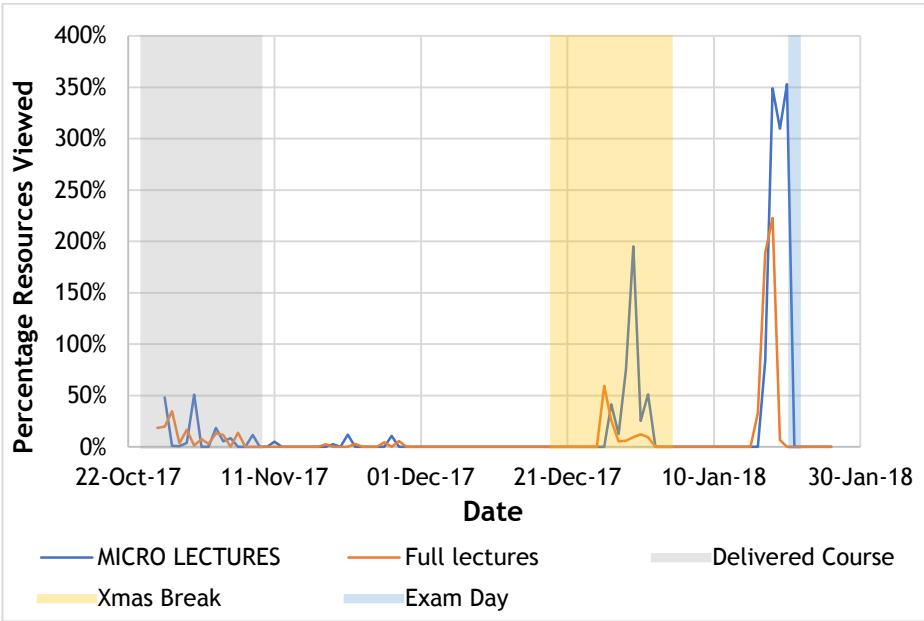

Figure 11: Viewing pattern of lecture captures and micro-lecture captures

Both initiatives, namely a more aligned teaching style and the use of lecture capture, have therefore proven to be well received and appreciated by the students and should therefore feature not only in my own teaching practice, but be implemented across all units of the EMship+ Master's.

There are however some limitations to the application of my proposed pedagogical improvements suggested here. Firstly, due to the high mobility of the students, a number of classrooms in several universities across Europe would need to be fitted with lecture capture technology, which represents a logistical and financial challenge. Moreover, the nature of the course is to involve a high number of academics to ensure students are taught by the best experts in their field.

This implies that a large number of lecturers would need to adjust their delivery methods. In that respect, some resistance has been experienced from certain academic staff, not willing to reflect on their practice and modify their teaching style. This constitutes challenges that must be overcome to provide an optimum learning environment to the EMship+ Master's students.

Conclusions

The acknowledgment made by higher education that diversity is a strength and should be promoted led to the creation of the interdisciplinary Erasmus Mundus Joint Master's Degrees, promoting student mobility across the world and attracting a highly diverse group of students, amongst which features the EMship+ Master's in Ship Design.

By gathering information inherent to the backgrounds and future ambitions of my students, I was able to transform the learning journey, promote student engagement and provide learning activities targeted for their learning styles. Indeed, one of the outcomes of the evidence-informed research I conducted was the collaborative and participant learning styles of the students.

Consequently, I incorporated opportunities for discussions, better detailed the technical vocabulary, and added practical case studies and worked examples, thus meeting the expectations of the students. This particular unit achieving the highest satisfaction that year reveals its successful impact.

Furthermore, by bringing new technologies, such as lecture capture, and making innovative use of it, via micro-lectures with embedded quizzes, I successfully achieved a more engaging learning environment. The student survey realised before and after a two week trial showed the value of lecture capture as part of the course, and a significant increase in satisfaction after only a short period of implementation.

Both initiatives should therefore be fully integrated as part of the delivery of the course, with nevertheless some logistical challenges due to the international nature of the course, as well as staff resistance. Knowledge of the students is therefore vital in order to build a suitable learning environment, offer an engaging learning journey and benefit from the diversity of today's higher education, as I demonstrated in this particular case study.

Acknowledgments

I would like to express my immense gratitude to the following institutions and individuals for their support in conducting this research project:

- The University of Liege for inviting Southampton Solent University to deliver lectures as part of the EMship+ Master's.
- The European Education Audio-visual & Culture Executive Agency for providing the funding necessary to undertake the teaching mission in Belgium in both 2016 and 2017.
- The Solent Learning and Teaching Institute for the SEED funding award to investigate and promote the use of micro-lecture captures with embedded quizzes, as well as Tansy Jessop and Claire Saunders for their very much appreciated support and advice.

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Book Reviews

The Shallows: How the internet is changing the way we think, read and remember

Carr, N., 2010. *The Shallows: How the internet is changing the way we think, read and remember*. Great Britain: Atlantic Books.

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The premise of this book is, in one sense, simple: the internet has changed the way our brains are wired, and not for the better. Ignoring the irony that this central argument is presented in a format that demands a lot of brain power to read, the book is undoubtedly worth the effort. If, of course, you can resist the ping of an email arriving, the swoosh of a Facebook notification, the lure of the multiple open tabs on your web browser…

Refreshingly, Carr doesn't buy into the media's moral panic about the disastrous effects of social media and the internet on the intellect and mental health of the 'i-generation'. There are no prescribed daily screen times or sensational health warnings here. Instead, there is a meticulously constructed argument, which Carr sets out from the start:

> *'As our window onto the world, and onto ourselves, a popular medium moulds what we see and how we see it – and eventually, if we use it enough, it changes who we are, as individuals and as a society' (p.3).*

We begin with a trip through the halls of fame of psychologists and philosophers, tracing the relationship between philosophical and scientific understandings of the brain. Next, Carr explores the common trajectory of a new technology. Tracing the development of mapmaking and the invention of clocks, he shows that each is the result of our social and intellectual adaptation to what the technology offers.

What, then, do we learn from these opening chapters? Apart from a few fascinating facts (did you know, for example, that early experiments on the brain involved the drilling of monkeys' skulls?), Carr wants us to grasp two main tenets of his argument from the outset:

1. The brain's plasticity, previously rejected, is now widely accepted, even if much is still unknown and limitless practical applications remain to be explored.
2. There is an inextricable link between the ways in which technologies shape our thinking and in which our thinking is shaped by technologies.

Of course, it could simply be my rewired brain's insatiable need for bite-sized arguments, but I found myself wanting to get to the thrust of the discussion sooner – has the internet changed my

brain, and does it matter? But Carr isn't done with the history lesson yet: chapter four presents a comprehensive overview of the development of reading and writing and their associated technologies. Ingeniously, however, this chapter does something else. It begins to slow you down.

> *'In the quiet spaces opened up by the prolonged, undistracted reading of a book, people made their own associations, drew their own inferences and analogies, fostered their own ideas. They thought deeply as they read deeply' (p.65).*

In other words, Carr achieves here the very thing he argues the internet could make obsolete. I could feel the cogs turning and the neurons rewiring as I was drawn into the narrative, the groundwork laid for the arguments to follow.

As Carr finally moves to the discussion of the internet, it is worth noting that he doesn't deny its benefits – its interactivity, searchability, use of multimedia and the sheer volume of information at our fingertips. But, he argues, the internet seeps into our consciousness often unchecked and unnoticed, and begins to change us. His measured view of the evidence leads him to an alarming conclusion: we are in danger of ruining our concentration span, fragmenting our knowledge, narrowing our view of the world and finding ourselves at the mercy of what he terms the 'church of Google'. (In fact, if you choose only one chapter of this book to read, choose the Google chapter – it's terrifying.)

Regaining his equilibrium a little towards the end of a rather breathless exposure of some of Google's more questionable practices, Carr acknowledges the tensions inherent in his argument:

> *'That doesn't mean that promoting the rapid discovery and retrieval of information is bad. It's not. [But] there needs to be time for efficient data-collection and inefficient contemplation, time to operate the machine and time to sit idly in the garden…The problem today is that we're losing our ability to strike a balance between those two very different states of mind. Mentally, we're in perpetual locomotion' (p.168).*

He is right – and we may well recognise this in ourselves and in our students. It is worth a bit of inefficient contemplation to consider how we might regain some balance. And it is here that I would like to make a little more of the throwaway epilogue to the book in which Carr wonders whether we might rise to the challenge to 'be attentive to what we stand to lose' (p.224).

The Shallows was published in 2010. In 2017 the percentage increase in the sale of books and a decline in e-book sales was recorded for the second consecutive year (The Guardian 2017). The fake news scandal engulfed the media in the wake of the 2016 USA presidential election. The term 'digital detox' has entered the dictionary. Carr's arguments are persuasive and the picture he paints of the internet and its power should not be ignored. But there is evidence that the tide could turn, and our own role in teaching our students to think, to question and to strike a balance between the internet's efficiency and the need for inefficient contemplation should not be under-estimated.

Writing the New Ethnography

Goodall, H.L., 2000. *Writing the New Ethnography*. Lanham: AltaMira Press

Bethany Ford

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Goodall aims to provide a foundational understanding of the trials and triumphs of ethnographic research. He achieves this by recounting his experience as an academic and an ethnographer; a context which as someone new to ethnography, I found rather handy. For me, this book not only had to make clear the issues around the processes of ethnographic research, but also the very concept of ethnography. In a word, ethnography is 'the act of becoming who you are'; an ambiguous statement, which suffice to say, did not help clarify ethnography at all. However, on finishing the book, I realise that there probably isn't a more fitting definition. Ethnography is writing not only about the situations you are party to, whether directly involved or not, but going further and reflecting on your role in, and experience of that situation. If this was your career, it would require deep self-reflection on a near-daily basis, essentially becoming a way of life, hence becoming who you are.

Goodall introduces us to the academic challenges around new ethnography, namely the obligation for more reflexive research than traditional ethnography demands. The paradox ethnographers face is that staying true to ethnography is not staying true to the current bounds of academia and vice versa. No matter how little or how much a researcher tries to remain impartial, their presence alone can influence the behaviours of others. This contradicts the call for objectivity that many scientific approaches to research in modern academia demand. However, Goodall argues that academic legitimacy can be maintained by combining solid fieldwork with good writing.

In addressing the appeal of ethnography, Goodall explains feeling unease on hearing the following scientific definition at a NASA lecture: 'Humans are sacks of behaviours suspended by a calcium skeleton and driven by something called cognition.' (Ibid, p.63). As a psychology graduate I am inclined to side with Goodall's unease – this definition vastly oversimplifies people. Therein lies the value of ethnography as a means of understanding humans as more than 'sacks of behaviours'. The desire to accurately represent human behaviour, combined with a zeal for creative writing drew Goodall to ethnography.

Obviously, it is impossible to report the exact nature of behaviour, making the next chapter invaluable! It is about writing field-notes, the purpose of which is to serve as 'grammar that we investigate culture through'. Anything an ethnographer deems relevant to record is relevant to their account of a culture, which explains Goodall's unsatisfying advice to include 'everything' in field-notes. Ethnography is the art of crafting 'everything' into something meaningful which

retains the researcher's voice, whilst representing a culture. Goodall discusses how to broach this, highlighting the importance of co-creating an 'authorial character', a process he poses as an extended conversation whereby a writer attempts to create a persona, while readers establish one from what they read. However, 'texts belong to readers, and not writers' (Ibid p.134), meaning authors ultimately have little control over the interpretation. This uncomfortable truth encapsulates one difficulty with ethnography; crafting a persona which relies on someone else to come to fruition.

The book leaves no stone unturned about ethics in ethnography. For example, Goodall scrutinises the word 'legitimately' - 'how do you legitimately gain the confidence and trust of informants?' Such deliberate wording in the questions ethnographers face shows the intense scrutiny their research comes under.

However, the ethics of writing has undergone less scrutiny, which Goodall attributes to the oft-held perception that the 'real' research is the fieldwork. He shifts the emphasis to writing ethically, particularly - 'thou shalt not plagiarise!' (Ibid p.156), a 'commandment' we are taught to obey through referencing, but nothing's safe as he delves into the murky ethics of referencing. Even chain link referencing holds dangers of not fully representing each person's contribution. And when does artistic license becomes 'ethnographically cheating'? Who owns the right to a culture's story, and how would it differ if another told it?

Goodall ultimately states there are no set answers to these ambiguous ethical dilemmas, reminding budding ethnographers that 'authors are accountable for what they write.' To summarise, ethnographic research is an ethical minefield!

The concluding chapter looks to ethnography's future. Goodall poses questions about new ethnography ranging from why we read papers to how scholarly worth is judged, all of which serve to illustrate the importance of self-awareness when writing for others. He highlights the benefits of new ethnography. Put simply, it is more creative and reflexive than 'old' ethnography, and when done well, allows us to learn about culture. Not all 'new ethnography' is necessarily 'good' new ethnography (Ibid p.192), but when properly done, it contributes to 'intellectual evolution', promoting purposeful knowledge and rich insights about culture (Ibid p.198).

On finishing the book, you wonder if you've read a foundational guide, or an autobiographical snippet of Goodall's life. Finding so many personal anecdotes throughout the book was particularly ironic, as Goodall warns against becoming self-indulgent in ethnographic work. However, as someone new to the field, I may simply misunderstand the extent to which 'the self' should be included in ethnography. The personal references always illustrated a point, and broke up what was, overall, a tough read. A problem compounded by specialist jargon but overcome by handy writing exercises at each chapter's end that clarified cloudy concepts. Goodall ultimately achieves what he aims to: demonstrating the highs and lows of writing new ethnography.

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